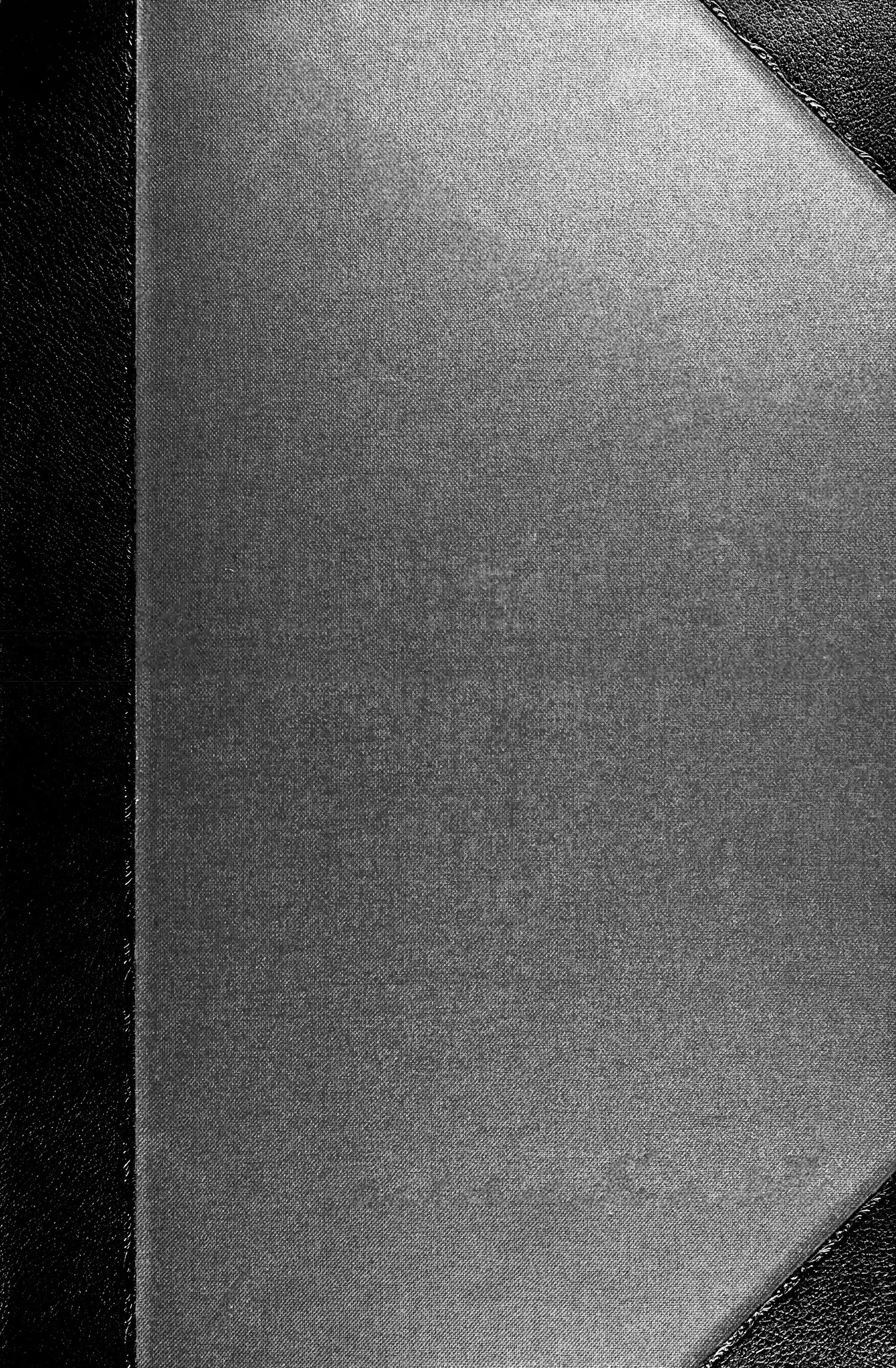


WAL
F

Wallich, N., Tentamen florae napalensis illustratae *etc.*

cf. E. M. TUCKER, J. Arn. Arb. 18 (1937) 260.

A list of 'Lithographic Publications . . . published at the Asiatic Lithographic Company's Press', dated 1 Aug. 1826, mentions the 2nd part of WALLICH's Tentamen as being still in the press (W. T. STEARN *in litt.*, Feb. 1951).

Part	*Pages*	*Plates*	*Dates*
1	1–~~24~~ 36	1–25	after June 1824
2	~~25~~–64 37	26–50	after Aug. 1826

TENTAMEN

FLORÆ NAPALENSIS ILLUSTRATÆ

consisting of

BOTANICAL DESCRIPTIONS

and

LITHOGRAPHIC FIGURES

of select

Nipal Plants.

By N: WALLICH, *M.&Ph.D.*

Printed and Published at the Asiatic Lithog.c Press.

1826.

N°2

26 *Cryptochilus sanguinea,*
27 *Chrysobaphus Roxburghii,*
28 *Dendrobium leopardinum,*
29 *Lilium longiflorum,*
30 *Euonymus grandiflora,*
31 *Primula petiolaris,*
32 { *Primula rotundifolia,* / *Primula pusilla,*
33 *Primula floribunda,*
34 *Primula Stuartii,*
35. *Wulfenia obliqua.*
36. *Adamia cyanea,*
37. *Thunbergia coccinea,*
38. *Gymnema napalense,*
39 *Dactylicapnos thalictrifolia,*
40 *Corydalis chaerophylla,*
41 *Corydalis meifolia,*
42 { *Corydalis juncea,* / *Corydalis longipes,*
43 *Podocarpus macrophylla,*
44 *Taxus nucifera,?*
45. *Myrica sapida,*
46. *Tricyrtis pilosa,*
47 *Crawfurdia fasciculata,*
48 *Crawfurdia speciosa,*
49 *Hydrangea vestita,*
50 *Hydrangea altissima,*

Pages 57 to 64 Letter Press.

PROPOSALS FOR PUBLISHING BY SUBSCRIPTION,

A NEW BOTANICAL WORK,

ENTITLED

TENTAMEN

FLORÆ NAPALENSIS ILLUSTRATÆ:

CONSISTING OF

Botanical Descriptions

AND

LITHOGRAPHIC FIGURES

OF SELECT

NIPAL PLANTS.

By N. WALLICH, M. & Ph. D.

I. IT is intended to publish this work in fascicles, each consisting of twenty-five plates, executed in the lithographic manner; the figures to be about two-third of the natural size; four fascicles to constitute one Volume.

II. Each plate will be taken off on royal folio, the descriptions will be printed on the best Europe paper.

III. At the close of the work will be given a general index, and a synoptical table of all the plants described.

IV. Each fascicle will be delivered to subscribers in a separate port folio; the fourth fascicle will contain the Title Page, Dedication and Preface; and the concluding fascicle of the successive Volumes, will contain the respective Title Pages of these.

V. The first fascicle, which is now published, will serve as a specimen of the work, and will be sold at the reduced price of eight Rupees. In consequence, however, of most copies of the plates, having been struck off on Patna paper, it is intended to reprint these in order to secure uniformity with the subsequent parts of the work. The few copies of the first fascicle which have been taken off on royal folio, as well as all the succeeding numbers, will be sold at sixteen Rupees each, payable on delivery. The reprint of the plates of the first fascicle will be delivered during the progress of the first volume, at the completion of which, the balance between the reduced and full price, is to be paid.

VI. A limited number of the plates will be coloured. On account of the difficulties and expence attending their execution, the fascicles with coloured engravings, will be sold at the rate of twenty-eight Rupees each.

VII. The work will be completed in three Volumes or twelve fascicles; and it is expected, that one fascicle will appear every third month.

VIII. Subscriptions will be received by the Asiatic Lithographic Company at their establishment, by Messrs. Smith & Co. and Thacker & Co. at the Hurkaru and St. Andrew's Libraries, and by Messrs. Mackintosh & Co. where specimens of the work may be seen.

THE interest which has been excited, by a more intimate acquaintance with the regions of Nipal, has extended to its vegetable productions, and the attention of the lovers of Horticulture and Botany has, within the last few years, been particularly attracted to that quarter. The result has surpassed the most sanguine expectation; and both in the novelty of its extensive Flora, and the splendor of many of its vegetable productions, Nipal has been found to furnish accessions, of the highest value to botanical studies.

Although, however, the enquiries instituted in this direction, have been highly successful, yet the actual results have been hitherto but partially and incompletely submitted to the public. Some short notices occur in the travels of Turner, Kirkpatrick, and Hamilton; and a number of descriptions, furnished by the latter distinguished naturalist, are published by Sir J. E. Smith, in Rees's edition of the Encyclopedia Britannica. A more ample collection is preserved in the Flora Indica of the late Doctor Roxburgh, of which two volumes have already appeared; and to these sources of information, the author of the present work adds opportunities, particularly his own, which afford him a more copious supply of materials for illustrating the Flora of Nipal, than were within the attainment of any of his predecessors.

Besides actual residence in Nipal for the space of a year, under circumstances, far more advantage-

ous, than any hitherto enjoyed, and the active employment of collectors sent abroad from the Hon. Company's botanic garden at Calcutta, the author is indebted for most valuable contributions, to a number of his friends, whom it may be sufficient to name, to indicate the benefit, he is proud to have derived from their assistance. Lieut. A. Gerard; Assistant Surgeon J. Gerard; Dr. G. Govan; Capt. W. S. Webb; Sir Robert Colquhoun, and the Hon. E. Gardner, have most liberally lent that aid to botanical accumulations in the new region of the northern mountains of India, which was to be expected from their zeal for science, combined with the advantages of their local situation.

The number of descriptions, drawings, and specimens thus accumulated, is more considerable, than could have been anticipated; particularly if the sphere of the collection had been restricted to Nipal proper. But the extensive field, laid open to the author's personal observation on his visit to the hills, and the still more extended tract, from which the above-named Gentlemen enabled him to gather further supplies, have been comprised within the plan of his present attempt, as connected by general analogies of site and climate, with the more immediate object of his labours. Although, therefore, the great valley of Nipal and the surrounding mountains, together with the tracts between Nipal and its frontiers, bordering on Tirhoot and Chupra, have furnished him with his amplest harvest, yet he has derived very considerable additions from the contiguous districts of Kamaon, Shreenagur, Sirmore, and several portions of the Himalaya range. Such of these, as are most remarkable and interesting, will find a place amongst the selections, which the author now proposes to publish, and which will comprehend all those plants, that are most valuable for their novelty, their peculiarity, and their usefulness.

In undertaking a publication of so novel a character in Calcutta, as an extensive Botanical work, illustrated by figures, the author has necessarily to contend with no ordinary difficulties and is far from venturing to aspire at perfection, which is equally denied by his limited abilities, and by the peculiar disadvantages of executing such a work in a country, so unfavourable to undertakings of that nature. He can, therefore, only pledge himself to exhibit the plants by faithful descriptions, observations on their habitation, mode of growth, employment, native names, &c. and by plain but accurate representations, accompanied by the necessary dissections of the flowers, and fruits; while he is compelled to resign all attempts at emulating the classical perfection and graphic elegance of similar botanical works in Europe to those, more bountifully gifted than himself, and more favorably situated in regard to the many facilities, which the presses at home place at their disposal:—facilities, which must long be unknown to publishers in India.

With regard to the plates the author begs to add, that had it been necessary to have them executed on copper, by native artists, he should scarcely have ventured on the present publication. About nine years ago, he was induced to make such an attempt, in a work he was then preparing on the plants of India, on a plan similar to that, adopted by his predecessor at the Botanic garden at Calcutta in his "Plants of the coast of Coromandel," published in England; and on that occasion found it necessary, not only to superintend the engraving with unremitting attention, but even to conduct the striking off the impressions himself. The labour, which a series of engravings on copper would have imposed upon him, and the little familiarity which he could be supposed to possess with such avocations, would have precluded the appearance of his present undertaking. Its publication is therefore, chiefly due to the establishment of the Government Lithographic press of Calcutta, by which alone, under existing circumstances, the engravings can be executed with any reasonable degree of facility. That they will be executed with all the exactness that is to be wished, and with a degree of perfection highly creditable to the infant state of the Lithographic

art in Calcutta, the public have every reason to expect, from the talents and diligence of the Superintendant of the press, and the satisfactory proofs he has already given of the powers of the establishment. The Asiatic Lithographic Company have indeed, in this instance, an additional claim upon the patronage of the public, as they have liberally taken the whole risk as well as labour of the publication upon themselves.

Botanic Garden, Calcutta, 1st January, 1825.

MAGNOLIÆ, MICHELIÆ ET KADSURÆ NAPALENSES.*

Next after the stately *Rhododendrum arboreum*, the members of the family of *Magnoliaceæ* claim the most conspicuous rank among the vegetable productions of Nipal, whether we consider the magnificence and fragrance of their flowers, the beauty of their foliage, or the general elegance of their growth. They are without exception large deciduous forest trees, yielding excellent wood for the purposes of carpentry and joinery, and not only admitting of being introduced into Bengal (three of the five growing with great luxuriance in the Honourable Company's botanic garden at Calcutta), but holding out fair prospects of standing the winter even of Europe. They blossom during the summer and ripen their fruits about the close of the rains; during winter, that is to say, from the beginning of November to the end of Febrnary, they shed their leaves in common with the majority of the trees of that Europe-like country; and in March they are again full of buds, which soon are succeeded by those of the blossoms. These buds are of a nature which is, I believe, peculiar to this family, and unite, at once, their own proper function, of protection to the tender shoots, to that, belonging more properly to the office of stipules. They consist of two, at first fleshy, afterwards membranous scales, which are always more or less downy, cohering in the shape of a cylindric tube, whose base is inserted circularly round the branch and obliquely along a protuberance on the upper side of the petiol, which latter scarcely extends beyond this said insertion and is at first totally destitute of any leaf-like appearance. As soon as the bud has come to its full size it splits into two equal lobes, beginning from the base and ascending along that side, which is opposite to its insertions on the petiol and soon drops off in the form of two large stipules.—The flower buds are large, solitary, erect, of an oval form, mostly clothed with wool or down, lifted up on a short, stout, columnar peduncle, and in *Michelia* always axillary; they are enveloped in two entire, membranous, rounded spathes, the outer one much sooner caducous than that within, which is contracted at the base into a cylinder, closely embracing the upper part of the peduncle. When it is considered, that these noble trees are natives of a country, where the heat is never intense, and where they are exposed, during four months of the year, to a rather severe winter, sometimes even to falls of snow; that they are deciduous, and lastly, that they are extremely well furnished with protection for the tender leaves and blossoms; reasonable hopes may be entertained of their standing the winter even of England, equally well with many other plants from those regions, which I have already had the happiness of introducing, and which I believe, have answered every expectation.—To the practical botanist such details as these are neither uninteresting nor unimportant; I shall therefore resume them in treating of each particular species.

My two Magnoliæ are entirely new, and they certainly yield to none of North America in splendour and magnificence; one of them furnishes a very useful sort of wood, called *Chaump*, which is highly prized for furniture.—Two of the Micheliæ have been noticed by professor De Candolle, in his invaluable Systema Naturale; but his descriptions are rather short and deficient, owing to their having been made from dried specimens, which were collected above twenty years ago, by my friend and pre-

* The following account of these genera was presented to the Medical and Physical Society of Calcutta in May 1823, and it is with the consent of that highly meritorious body, that I am permitted to introduce it here in its original form, with very few additions or alterations.

decessor Dr. Hamilton; and a superficial acquaintance with the plants of this tribe is sufficient to convince any one, how very difficult it is to fix on decisive and discriminating characters for them, even under every advantage of observing them in their wild and most luxuriant state. I have little doubt, however, that the descriptions were intended for the very species, with which I have identified them. I am further corroborated in this assertion by a consideration of the *habitat*, which the learned author, on the authority of the discoverer, has assigned to the trees in question, namely at Narayoon Huttee, where my two Magnoliæ do certainly not grow. That his *Michelia Doltsapa* cannot possibly be my *Magnolia excelsa* is likewise obvious from the fact, that this tree is limited to one single station in that part of Nipal, which Dr. Hamilton and myself were allowed to visit, namely the great valley and its vicinity, and considerably elevated above the latter.

I have purposely avoided referring to the venerable Rumphius, because there cannot be any question of his *Sampaccas* being distinct from mine, and quoting them as doubtful synonymes, would only be adding to the existing difficulties of the genus. I may, however, observe, in this place, that *Michelia parviflora* De Cand. which has been described and figured in the fine Icones Selectæ of the Baron De Lessert, the munificent patron of Botany in France, vol. 1. p. 22. *t.* 85, as the Ternate or small variety of Bonga Sjampacca of Herbar. Amb. 2. p. 200, appears to me as not by any means belonging to the genus.

The genera *Kadsura* and *Mayna* have hitherto been involved in considerable doubt. The first of these was discovered about a century ago in Japan by Engelbert Kæmpfer, and has been accurately described by him in his Amoenitates exoticæ. Thunberg afterwards gave an account of the plant in his Flora japonica, with the addition of a description of the flower, omitted by his predecessor, under the Linnean name of *Uvaria japonica*, which was retained by all succeeding writers, until Jussieu suggested the idea of establishing it as a distinct genus in the family of *Annonaceæ* (Annal. du museum d'histoire naturelle, 16. p. 340) which both Dunal and De Candolle have subsequently adopted. Roxburgh, who received it from Sylhet, calls it *Uvaria heteroclita* in his manuscript Flora indica. The other genus, *Mayna*, was first described by Fusée Aublet, who found it at Cayenne, but had no opportunity of seeing the female flowers or the fruit. It is on this authority alone, and aided by very scanty materials indeed, that Jussieu and De Candolle have referred *Mayna* to the family of *Magnoliaceæ*. That these two illustrious botanists should have ultimately failed in deciding on the proper station of the above-mentioned shrubs, in the natural system, is not surprizing, when it is recollected, that their conclusions could only be founded on data, which were not calculated to afford much insight into natural affinities: on the contrary, it will be seen from the following descriptions, how closely their sagacity made them approach the mark and how impossible it would have been to proceed a single step farther, without being aided by a knowledge of the internal structure of the seed. These two genera ought, I think, to be united into one, which has a very strong affinity to *Schisandra* of Michaux: so strong, indeed, as to render it extremely doubtful if they ought to be separated from each other. In this case the last mentioned name would be far preferable to the barbarous *Kadsura* or *Mayna*, and I should accordingly have adopted it, if it were not derived from a character, which is inapplicable to the species with distinct stamina. They all belong to the family of *Menispermeæ*, connecting it with *Magnoliaceæ* and *Annonaceæ*, and perhaps constituting a new intermediate order, as has already been hinted by Professor De Candolle (Syst. Nat. 1. p. 544.)

Since this was written, I have been put in possession, through the kindness of my most excellent friend Dr. Abel, of all the splendid botanical works of Baron Humboldt, whose *Wintera granatensis*, Plant. æquinoctial. 1. p. 205. *t.* 58. (*Drymis*, nov. gen. 5. p. 53.) bears a strong generic resemblance to our plants. This circumstance leads me to suspect that they must be referred, together with that genus, to Mr. Brown's new

order of *Winteræ*, alluded to by De Candolle, loc. cit. p. 548. It will be seen, hereafter, that Dr. Hamilton actually considered one of the Kadsuræ as a species of Drymis.

It is not a little remarkable that Nipal should produce two distinct shrubs, resembling a plant of French Guiane, another of North America and a third of Japan to such a degree, as to be difficultly separable from the former, and scarcely at all to be recognized as different from the last: and that they should serve to connect them all under the standard of one genus only.

None of the preceding plants possess to my knowledge any particular medicinal properties, nor are they admitted into the materia medica of India. The fruit of both my *Kadsura* are eaten by the hill-people. They have all more or less of an aromatic pungency diffused in their leaves and seeds, especially in the pulpy arillus of the latter, and their flowers are in most instances delightfully fragrant. The wood of the arborescent species is very useful, and not inferior to that of our Champa of Hindoost'han (*Michelia Champaca*, Linn.); that of my *Magnolia excelsa* is, as I have already mentioned, highly valued for furniture.

MAGNOLIA INSIGNIS, *Wall.* TAB. 1.

Arborea, foliis oblongis acuminatis subtus glaucis, gemmis ferrugineo-tomentosis; floribus terminalibus solitariis novem-petalis; petalis tribus exterioribus calyciformibus reflexis; alabastris laevibus; strobilo ovato densé imbricato, capsulis verticalibus tetraspermis.

Nomen Newarrense, *Seete Soah*.

Crescit praecipue in collibus prope *Sankoo* convallis Napaliæ; etiam observavi ad cacumen montis *Sheopore* adque latus ejus septentrionale, altitudine sex usque ad decem mille pedum.—Floret Aprili, Majo; fructus maturescunt Octobre.

Arbor vasta, ramosa, trunco recto, sæpe quatuor vel quinque pedes diametro emetiente, comâ densé frondosâ expansâ et umbrosâ. *Rami* glabri, striati, cinerei, calloso-punctati. *Ramuli* virides, glaucescentes, crassi, cylindrici, laeves, notati vestigiis annularibus, horizontalibus vel obliquis, a lapsis stipulis manentibus, approximatis, villosulis, demum glabris et distantioribus. *Folia* versus summitates valde approximata, patentia, undique sparsa, oblonga, in luxuriantibus ramis magis elongata et sub-cuneata, in vetustioribus ad formam ellipticam tendentia, acuminata, integerrima, deorsum parum angustiora, basi acuta, coriacea, firma, uncias sex ad decem longa, plana, laevissima, atroviridia, lucida, subtus glauca et opaca, pube adpressâ haud copiosâ solubili et evanidâ conspersa, costâ gracili elevetâ, nervis copiosis parallelis numerosis approximatis tenuibus ad marginem anastomosantibus, siccitate utrinque, imprimis subtus, eleganter reticulato-venosa.—*Petiolus* gracilis, teres, sesqui-aut bipollicaris, glaber, basi subtus parum intumescens, suprá notatus plagâ elevatâ planá lineari unguem longâ extrorsum obtusâ et rotundatâ, primum villosulâ, olim stipulas vel gemmam adfigente. *Stipulæ* (fig. 15, 16.) duæ, oppositæ, oblongæ, acutæ vel acuminatæ, plagæ istæ petiolari et lineolæ annulari rameæ insertæ, ramum ipsum omnino amplectentes, valde deciduæ, initio connatæ in gemmam oblongam, densissimé cinnamomeo-tomentosam intus laevem, juxta latus ramum spectans demum fissam citoque delabentem.—*Flores* (fig. 1.) speciosissimi, fragrantes, ex albo rosei, campanulato-patentes, terminales, solitarii, erecti, tres quatuorve pollices longi, laeves, suffulti *pedunculo* laevi columnari crasso medió cicatricem orbicularem gerente, supernè pallido sub albicante. *Alabastra* erecta, ovato-oblonga, obtusa, basi rotundata, bipollicaria, involuta *spathâ* (fig. 8.) lato-ovatâ subrotundatâ membranaceâ laevi, basi contractâ in collum breve, cylindricum, dimidiæ superiori pedunculi parti arctè adpressum, medio ejus insertâ, caducâ.—*Calyx* petaloideus, triphyllus, erubescens, demum fuscescens: *sepala* oblonga, obtusa, deorsum parum angustata, reflexa

et directé dependentia, coriacea, parallelé et viridiusculé nervosa, parum reticulata, tripollicaria. ***Petala*** octo vel novem, valde crassa et coriacea, alba, demum flavicantia, sursum rosea, figurâ et magnitudine satis ab invicem discrepantia, scilicet obovata, cucata vel oblonga, obtusa, vel acutiuscula, parallelé et graciliter vasculosa, seriebus tribus apici pedunculi, circum basin tori, alveolis majusculis inserta ; interiora sensim breviora sæpiusque angustiora, una cum sepalis staminibusque subito delabentia. ***Columna fructificationis*** ovato-conica, sesquinnciam longa, basi integrum fere pollicem crassa. *Torus* (fig. 2.) sub-lignosus, crassus, sanguinei coloris, columnaris, dimidiâ inferiore parte punctis elegauter decussantibus a staminum insertione inscriptus ; superne cum ipsis ovariorum basibus conferruminatus.—***Stamina*** (fig. 3, 4.) plurima imbricata, adpressa, lineas octo longa, interiora sensim elevatiora, apicibus obliqué truncatis rhomboideis regulariter decussantia. ***Filamenta*** brevissima, crassiuscula, carnosa, rufa; ***antheræ*** lineari-oblongæ, apiculatæ, utrinque loculiferæ, loculis albicantibus ***introrsum*** (fig. 4.) dehiscentibus, polline albo e particulis cylindricis conflato.—***Ovaria*** (fig. 5, 6.) plurima, cuneata, sub-quadrangularia, e viridi glaucescentia, minutim punctulata, glabra, arcté imbricata, vertice truncatâ rhomboideâ sulco perpendiculari intermedio exsculptâ ; inferiora magis latitudine verticali, superiora plus longitudine extensa, fabricâ fibroso-lignosâ ; unilocularia, (fig. 7.) loculo ad basin locato laevi lucido angusto, 4-6-spora : *ovula* grandiuscula, angulo interiori loculi per paria adfixa. ***Stylus*** ex angulo superiore verticis ovarii surgens, erectus, subulatus, tres lineas longus, deciduus, dorso sulco notatus, apice parum patulus. ***Stigma*** latus externum styli occupans, scabriusculum, constans papillis numerosis minutis.—***Capsulæ*** valde numerosæ, densé imbricatæ, verticales, magnitudine et figurâ variantes, unguem digiti medii haud superantes, compressæ, laeves, purpureæ, dispositæ in ***strobilum*** (fig. 9.) ovato-oblongum, quinque-pollicarem, obtusum, erectum, suffultum pedunculo lignoso columnari bipollicari nudo, vestigiis insertionis spathæ partiumque floris inscripto ; vertice rhomboideâ verticaliter juxta sulcum perpendicularem dehiscentes in valvulas (fig. 10.) duas plano-concavas ligneas, intus tegumento chartaceo laevissimo nitente munitas.—***Semina*** (fig. 11.) tria vel quatuor, ovata, dorso convexa, hinc angulata, sibi invicem adpressa, magnitudinis pisi majoris, coccinea, laevia, angulo loculi interiori, bases valvularum connectenti, adfixa ope funiculorum brevium sericeorum niveorum, horumque elongatione fere semi-pollicari demum extra cavitatem dependentia. Ovula aliquot minuta, sterilia s. abortiva, emarcida observanda sunt ad basin seu angulum interiorem loculi, inter funiculos. ***Arillus*** (fig. 12.) carnosus, lineam dimidiam fere crassus, ruberrimus, odore et sapore parum aromatico, ad basin seminis, axi strobili obversam, insculptus foveâ umbilicali parvâ. ***Integumentum*** exterius durum, fere osseum, leviter scrobiculatum, atrum, nitidum, compressum, lenticulare, crassiusculum, extremitate ***superiore*** perforatum ***umbilico interno***, illo exteriori diametricé opposito. ***Integumentum interius*** constans pelliculâ tenuissimâ ***perispermum*** involvente carnosum acqueo-pallidum, cavitatem exacté replens. *Embryo* (fig. 13.) minutus, in parte supremâ perispermi prope umbilicum internum pendulus, rectus, niveus ; *cotyledones* ovatæ, obtusæ ; ***radicula*** subturbinata, obtusa, ***supera !***

Observation.

It is scarcely possible to contemplate a more magnificent object than this noble tree exhibits, both when it is covered with flowers and in fruit. Nothing can exceed the former in elegance: they are very large, of a white or yellowish-white colour, tipped with pink, while the reflected calyx or rather calycine petals are of a brownish red tint, elegantly reticulated with greenish nerves and veins; their smell is agreeable, somewhat resembling that of Magnolia glauca, and though not very strong, yet the accumulated fragrance of the innumerable blossoms, with which this tree is covered at one and the same time, extends to a great distance. They are of no long duration, as

the leaves of the corolla and calyx soon drop off together with the stamina, leaving the ovaria quite naked; these in the course of five or six months become ripe capsules, disposed in large purple erect cones, which contrast elegantly with the scarlet seeds suspended on white, capillary, longish threads and hanging down loosely in all directions. The dark, elegant and thick foliage contributes to render the sight extremely agreeable. It is only during the winter months, from November to February, that the tree is altogether naked. The stipulation or gemmation is remarkable and belongs, as has already been noticed, to all the members of the family. The buds are axillary and terminal, long, subcylindric, inserted round the branch and on the protuberance which occupies the half of the petiol; at first there is no leaf at all, but gradually a small elevation becomes observable on the back of the bud, just above its base, which quickly grows out, becoming the upper part of the petiol and at length expanding into a leaf; the bud itself in the mean time rapidly increases in length and width, together with the tender branch which it encloses, and at length it splits along the outside and drops off in the form of two stipules, leaving behind it a circular, either horizontal or more or less oblique vestige of its insertion on the branch, and a flat lengthened prominence on the petiol, reaching from its base to above the middle.

I have only seen this tree in abundance at Sankoo in the valley of Nipal; on Sheopore it grows very sparingly. Its wood is of a pale yellow colour, close-grained, and probably very applicable for carpenters use; it is however not employed by the hill people, who, I am sorry to say, care little about cutting down the most glorious trees of their country, such as the Rhododendrums, even for the most trivial purpose of fuel and rafters.

The present species unites the two sections of the genus as doubtfully proposed by De Candolle, loc. cit. p. 450. The fruit is densely imbricated, strobiliform, with pendulous seeds, and the spathe is one-leaved as in the American species; but the dehiscence of the anthers is decidedly interior like those of Asia. For reasons, which I shall explain in treating of M. excelsa, I think, that all the spike-fruited species might conveniently be removed to Michelia; of their number is M. fuscata, which I have had an opportunity of examining in October 1818, when it ripened its fruit for the first time in the Honourble Company's botanic garden and of which I take this opportunity of giving a carpological account.

Capsulæ ovatæ, lateribus gibboso-convexis, obliqué acutæ, punctis parvis collosis asperæ, magnitudinis baccæ Grossulariæ minoris, cinerascentes, sessiles, patentes, decem vel plures, haud paucis abortivis parvulis intermixtæ, dispositæ in spicam oblongam hinc inde curvam, tripollicarem, fructum *Michelice* plané referentem, pedunculatam. *Valvulæ* divaricatæ, plano-concavæ, intus rugosæ, nitidæ. *Semen* unicum, coccineum, ovatum, parum obliquum, loculo exacté correspondens, basi umbilicatum, mox post dehiscentiam extra suam cavitatem funiculo sericeo laxo dependens.—Nucula, embryoque inversus exacté ut in *Magnolia insigni*.

It is not a little surprizing that, according to the accurate Gærtner the embryo of *M. grandiflora*, Linn. is erect, Carpol. 1. p. 343. t. 70: whereas it is unquestionably *inverse* with a *superior radicle* in the three species which I have examined.

Before concluding I may remark, that I have found a few individuals in the forests of Nipal, of a tree, which I hesitate not pronouncing to be Roxburgh's *Liriodendron grandiflora*, notwithstanding I have only observed them in foliage. This noble tree blossoms annually at the botanic garden, but has not as yet ripened its fruit; the stipulation of the family is peculiarly beautifully illustrated by this species.

MAGNOLIA EXCELSA, *Wall.* TAB. 2.

Arborea, foliis oblongo-ellipticis, acuminatis, subtus valde glaucis; alabastris gemmis-

que ferrugineo-barbatis; floribus solitariis, axillaribus; petalis duodecim, calycinis nullis: capsulis globosis, remotis, spicatis, monospermis.

Nomen Parbutteanum *Champa* s. *Chaump.*

Observavi tantummodo in monte Sheopore Napaliæ, ad elevationem ab oceano septem circiter mille pedum, florens Martio, fructibus maturis Octobre.

Arbor 50-ad 80-pedalis, admodum ramosa, trunco valde crasso, cortice varié fisso et rimoso. *Ramuli* crassi, teretes, fuscescentes, juniores grysei, punctis callosis majusculis conspersi, vestigiis stipularum delapsarum annularibus, horizontalibus vel obliquis, notati.—***Folia*** sparsa, patentia approximata, pollicem et dimidium circiter distantia, coriacea et firma, oblongo-elliptica, in acumen lineare acutissimum semiunciale abeuntia, integerrima, margine subinæqualia obsoleté que repanda, basi acuta, spithamaea ad dodrantalia, suprá laevia, lucida, saturaté viridia, leviter plicata; subtus valde glauca, fere pruinosa conspersaque pilis brevibus ferrugineis adpressis, aetate glabra, costâ prominulâ gracili, nervis alternantibus ad marginem anastomosantibus, more generis, præprimis dum sicca, pulchré reticulato venosa. ***Petiolus*** pollicaris et parum ultra, teres, gracilis, leviter sulcatus, basi parum intumescens, suprá vestigio lineari plano elongato notatus.—***Stipulæ*** duæ oppositæ, membranaceæ, oblongæ, acuminatæ, sesqui- ad bipollicares, tomento densissimo sericeo cinnamomeo vestitæ, intus laeves, more generis suprá descripta, initio in gemmam sub-cylindricam densé barbatam connatæ, mox solutæ citoque caducæ, vestigiis istis annularibus ramorum linearibusque petiolorum manentibus.—***Flores*** axillares, solitarii, magni, erecti, albi, fragrantes, campanulato-patentes, pedunculo elevati valde crasso brevi columnari, vix dimidium pollicem emetiente, cinnamomeo-tomentoso, ad medium notato vestigiis duobus annularibus paullo distantibus. *Alabastra* oblonga, acuta, cinnamomeo-tomentosa, mollissima, bipollicaria, *spathis* involuta monophyllis: exteriore fugacissimâ, interiore tomentosâ, intus laevi argenteâ diutius manente. ***Petala*** (fig. 1.) 12 vel 13 coriacea, crassa, glaberrima, oblongo-ovata, obtusa, deorsum angustiora, fere bipollicaria, interiora sensim angustiora et breviora, basi debilissimé viridescentia, coeterum alba, triplici disposita serie quadripetalâ, intimâ nunc quinquepetalâ.—***Columna genitalium*** (fig. 1, 3.) sesquipollicaris, erecta, basi crassior. *Stamina* (fig. 2.) plurima, laxé imbricata, inæqualia, tertiam petalorum partem longitudine æquantia; *filamenta* brevissima, carnosa, crassiuscula; *antheræ* adnatæ, marginales, paullo introrsum dehiscentes.—***Ovaria*** (fig. 4.) parva, fusco-puberula, tetraspora; *ovula* angulo interiori loculi ope funiculorum brevissimorum decurrentium adfixa. ***Stylus*** ovario longior, subulatus, recurvus, suprá papilloso-asperulus. *Baccæ* (fig. 5, 6.) parvæ, globosæ, calloso-verrucosæ, glabriusculæ, cinerascentes, magnitudine nucis avellanæ, basi latâ sessiles, pluribus effoetis interspersæ, in spicam quadripollicarem curvam digestæ, hiatu semicirculari suprà dehiscentes in valvulas duas divaricatas concavas. ***Semen*** (fig. 7.) unicum, grandiusculum, ovatum, subreniforme, coccineum, baccatum, plenâ maturitate extra loculum suum dependens, ventre exsculptum umbilico minutissimo.—*Arillus* carnosus, mollis, ruber. —*Integumentum exterius* atrum, crustaceum; *interius* tenuissimum. *Perispermum* carnosum, hyalinum. *Embryo* ut in priore specie.

Observation.

This is at all times a very beautiful, large tree, especially when in blossom. I have only met with it on mount Sheopore, where it is confined to one single spot: a limitation which is not of very rare occurrence among the plants of Nipal; thus *Orchis* (*Habenaria*) *gigantea*, Exot. Bot. is solely to be met with in a particular place of Nag-Arjoon, *Lyellia crispa*, Brown and *Daphne Gardneri*, Wall. are confined to one particular place on Sheopore. The wood is greatly prized by the inhabitants of Nipal as also at Patna, where it is employed for various objects of joinery and carpentry and

is commonly sold under the name of *Champ*. Its texture is very fine, the colour at first greenish, but soon changing into pale yellow.

I am doubtful whether to consider this fine tree as a Magnolia or a Michelia; it has entirely the structure of the flower and spicate rounded capsules of the latter genus, while the colour and smell of the flower and the solitary pendulous seed is that of the former. Perhaps a salutary reform might be effected by removing all the species of Magnolia, as it stands at present, which are furnished with rounded spicate, not imbricate, capsules to Michelia, which arrangement would, in all probability, comprize most, if not all Guillimiæ, De Candolle l. c. p. 450 et p. 455; a suggestion which has indeed been hinted at by himself in p. 447.

MICHELIA DOLTSOPA, *De Candolle*. TAB. 3.

Foliis elliptico-ovatis, valde acuminatis, subtus puberulis, longé petiolatis; alabastris gemmisque ferrugineo-tomentosis; petalis quindecim, interioribus angustissimis.

Michelia Doltsopa, De Cand. syst, nat. 1. p. 448.

Incolit varias sylvas Napaliæ, tam vallis ipsius quam montium minorum huic vicinis, florens Aprili et Mayo; fructifera sub-pluviis.

Arbor magna umbrosa, altitudine 60-pedali, trunco satis regulari crasso.—*Ramuli* teretes, cicatricibus plus minusve obliquis annulati, densé vestiti villositate sericeâ fuscâ; ætate provectiores glabri, cinerei, calloso punctati.—*Folia* magis forsan quam in reliquis remota, patentissima, integerrima, ad marginem leviter undulata, ovata, in acumen gracile, longum attenuata, basi acuta, nunc rotundato-acuta, palmaria ad 10-pollicaria, coriacea, suprá laevissima, lucida: subtus parum glaucescentia puberula, siccitate utrinque venuloso-reticulata.—*Petiolus* valde gracilis, pollicaris et sesquipollicaris, teres, ferrugineo-villosus, ultra medium notatus vestigio insertionis stipularum gracili elongato.—*Stipulæ* aureo-v. fusco-villosæ, connatæ in gemmam cylindricam acuminatam elongatam. *Flos* (fig. 1.) axillaris, solitarius, illo Champacæ vulgaris fere dimidio major, petiolo parum longior, flavus, valde fragrans. *Alabastrum* cylindrico-oblongum, densé vestitum tomento fusco velutino, bipollicare, spathâ (fig. 2.) duplici caducissimâ indutum. *Pedunculus* brevis, velutinus, cicatricibus duabus annularibus notatus.—*Petala* quindecim valde patula, ternario ordine disposita, quinque scilicet in singulo ordine, oblongo-spathulata, acuta, ad basin angustatam munita pube furfuraceâ punctis minutissimis impressis interspersâ; coeterum glabra; interiora valde angusta fere linearia. *Antheræ* subsessiles dorso latiore in apiculam subcarnosam desinente; loculamenta lateraliter dehiscentia. *Torus* ovariorum velutinorum cylindricus supra antheras sessilis. *Stylus* (fig. 3.) brevissimus, recurvatus, valde papillosus.

Observation.

As far as it is possible to judge from the short description of professor De Candolle, made from dried specimens of trees, which even in their natural and growing state are difficult of discrimination, I conclude that this is the species described by him under the name given above. *Latifolia* or *macrophylla* would have been an appropriate name, and one at once indicative of the chief specific distinction of the tree; it would at any rate be far preferable to a vague native name, which my most valued friend Dr. Hamilton, though in general inclined to employ such on the spur of the moment, in the hurry and inconvenience of travelling, for the purposes of easier reference, probably did not intend as a permanent one. No nation on earth is more fertile in the production of names of plants than those of India, who appear to have coined appellations in the hope of multiplying real or supposed virtues ad infinitum. This evil is greatly aug-

mented by the people often inventing names on the spot. If a specific or generic appellation is to be derived from any native language, which can never be necessary, and but rarely prove expedient, the Arabic or Sanscrit ought to be the only sources from whence they are to be derived.

MICHELIA KISOPA, *De Cand.* TAB. 4.

Foliis lanceolatis, acuminatis, glaberrimis, brevé petiolatis; *alabastris* gemmisque cinereo-villoculis; petalis duodecim, oblongis, subæqualibus.

Michelia Kisopa, De Cand. syst. nat. 1. p. 418.

Reperi in pluribus sylvis Napaliæ, eodemque anni tempore cum priore specie florentem et fructiferam.

Arbor excelsa, ramosissima. *Ramuli* glabri, teretes, cinerei, calloso-punctati, cicatricibus stipularum solitis notati. *Folia* sparsa, approximata, patentia, valde coriacea, rigida, oblonga vel lanceolato-oblonga, acuminata, basi nunc rotundata, nunc acuta, suprá valde lucida atroviridia, subtus pallida atque opaca, pube parcâ adpressâ aetate evanidâ conspersa, utrinque dum sicca eleganter reticulato-venosa; 5-7 pollicaria.—*Petiolus* gracilis, teres, pollicaris, e basi ultra medium suprá notatus plagâ elevatâ planâ lineari elongatâ. *Gemma stipulacea* oblonga, acuta, petiolum juniorem fere æquans, argenteo-vel cinereo-villosa.—*Alabastrum* axillare, solitarium, erectum, ovatum, brevé pedunculatum, semipollicare, cinereo-villosum; *spathæ* (fig. 4.) cito deciduæ, ovato-subrotundæ, obtusissimæ. *Flos* (fig. 1.) parvus, dilutè flavus, odore valde debili, pedunculo suffultus crasso, annulato, villosulo.—*Petala* duodecim acuta, lineari-cuneata, pollicaria. *Antheræ* fere sessiles, numerosæ, laxé imbricatæ, lineares, apiculâ nudâ cuspidatæ; locula marginalia, introrsum parum dehiscentia.—*Ovaria* (fig. 3.) ovata, sericeo-villosa, coacervata in columnam cylindricam, supra torum (fig. 2.) antherarum pedicello angulato semiunguiculari elevatam. *Styli* recurvati, pubescentes, papillosi. *Capsulæ* (fig. 5, 6.) subglobosæ, basi nunc latâ subadnatæ nunc subcuneatâ quasi pedicellatæ, cinereæ, punctatæ, majores quam in antecedente specie, dispositæ in spicam tortam quadripollicarem, pluribus abortivis intermixtis. *Semina* tria vel quatuor, ovata, coccinea.

Observation.

This species comes very near to M. *Champaca*, but besides being a larger forest tree, its leaves are, generally speaking, narrower and the flowers much smaller. I have scarcely any doubt of its being the same as that noticed by De Candolle, although his specific character does not well apply to it, the leaves being almost always more or less acute or attenuate at the base. The fleshy part of the seeds is aromatic, and that more so than in the other species.

MICHELIA LANUGINOSA, *Wall.* TAB. 5.

Foliis oblongis, acutis, subtus ramis gemmis alabastrisque cinereo-lanuginosis.

Eadem fere ac precedens incolit loca, eodemque tempore florens: sed rarior est arbor.

Arbor magna et procera, ramosissima. *Ramuli* obtecti cortice cinereo calloso-punctato; juniores uti foliorum pagina inferior, petiolus, alabastra, gemmæque vestiti lanugine densâ decumbente mollissimâ cano-argenteâ. *Folia* valde approximata, alterna, subbifaria, patentissima, oblonga, acuta, basi parum rotundata, apice cuspidata, 5 ad 10

pollicaria, valde coriacea, suprá lucida, nunc parum glaucescentia, subtus densissimé tomentosa, vix ætate glabriora, nervis parallelis, numerosis, ad marginem integerrimum arcuatim anastomosantibus, venis reticulatis tomento reconditis. *Petiolus* pollicaris, ætate parum glabrior, suprá notatus vestigio stipularum elongato. *Stipulæ* valdè deciduæ, oblongæ, densissimé tomentosæ, gemmas formantes oblongas, petiolum subæquantes. *Alabastra* axillaria, solitaria, oblonga, sesquipollicaria, lanugiuoso-barbata. *Spathæ* (fig. 2, 3.) duæ, oblongæ, cito evanidæ. *Flos* (fig. 1.) pallidè flavens, odoratissimus, brevissimè pedunculatus; *petala* numero variantia, decem ad quatuordecim, cuneata, acutiuscula, disco parum saturatius colorata, interiora parum angustiora. *Pedunculus* vix duas lineas longus, lanuginosus, crassus. *Columna genitalium* (fig. 4.) oblonga, petalis plus dimidio brevior. *Antheræ* (fig. 5, 6.) valde cadueæ, introrsum dehiscentes; *filamenta* brevissima, purpurascentia. *Ovaria* (fig. 7, 8, 9.) ovata, villosa. *Styli* erecti, columnæ subadpressi. *Baccæ* (fig. 10, 11.) magnæ, cerasos mediocres æquantes, obovatæ, deorsum paullo angustiores et fere pedicellatæ, *pedicello* admodum lato; cinereæ, calloso-punctatæ, cæterum glabræ, maturitate fuscescentes, tri- quadrispermæ, aggregatæ in spicam brevem, ovatam, longius pedunculatam. *Semina* (fig. 12.) magna, coccinea, arillo aromatico.

Observation.

It is impossible to confound this tree with any of the preceding kinds; the dense, soft tomentum, which covers all its parts, readily distinguishes it from them all. The fragrance of the flowers is less powerful and therefore more agreeable than in the other species.

KADSURA.

Juss. in Annal. du Museum d'hist. natur. 16. p. 340. Dunal Anonac. p. 25. 55 et 57. De Cand. syst. nat. 1. p. 465.

Mayna, Aubl.? *Schisandra*, Michaux. *Uvariæ*, spec. Thunb. et Linn.

Flores unisexuales, pentandri-polyandri, polygyni, apetali. Sepala novem, nunc duodecim, ternatim triserialia, alternantia. *Stamina* completa, *filamentis* carnosis; vel incompleta, *antheris* sessilibus, receptaculi foveolis adnatis. *Ovaria* conferta super receptaculum carnosum, dispora. *Styli* nulli. *Stigmata* solitaria, carnosa, emarcescentia, oblongo-clavata, medio adfixa, utrinque libera. *Baccæ* distinctæ, reniformi-ovatæ, mono-vel dispermæ, capitatæ, aut spicatæ. *Perispermum* homogeneum, cărnosum. *Embryo* dicotyledoneus. *Radicula* infera: vel centrifuga?

Classis Linneana: *Monoecia* vel *Dioecia*, *pentandria* vel *polyandria*.

Ordo. naturalis: *Menispermeæ*. *Wintereæ*, Brown?

Habitus. Frutices volubiles, glabræ. *Folia* alterna, subcarnosa, denticulata, exstipulata. *Flores* axillares, subsolitarii, fragrantes. *Baccæ* carnosæ, rubræ, edules.

Observation.

I have already hinted (p. 2.) at the supposed identity of *Mayna* with this genus. As far as can be gathered from the imperfect description and figure, given by that author, in the *Histoire des plantes de la Guiane* 2. p. 922. t. 352, the general form of the flowers agree; but there exists a remarkable difference in the monophyllous calyx and in the stipulated leaves of Aublet's plant. Until, therefore, we are better acquainted with that plant, it can only be admitted as a doubtful species. It agrees best with my *K. grandiflora*, both of them being furnished with distinct filaments; but the four-sided anthers,

recorded by Aublet, are wanting here.—Michaux's *Schisandra* seems to differ from the genus, solely in having a one-seeded berry, and in the shape of the seed, which is attributable, together with the slight modification in the posture of the embryo, to the first mentioned structure.

KADSURA GRANDIFLORA, *Wall.* TAB. 14.

Dioica, polyandra; *floribus* nutantibus, solitariis; *pedunculis* petiolo duplo longioribus, medio ebracteatis; *staminibus* completis, *filamentis* subulatis; *baccis* dispermis, spicatis, *rachi* crassâ, clavatâ.

Observavi frequenter in monte Sheopore Napaliæ, nec alibi; florentem Aprili, Majo, fructigeram Octobre.

Frutex late volubilis et scandens, omnibus partibus glaberrima. *Rami* numerosi, elongati, graciles, vix pennâ anserinâ crassiores, fusci, calloso-punctati, epidermide ætate demum solutâ; *tenelli* glaucescentes, rubicundi. *Gemmæ* parvæ, axillares, subcylindricæ, acutæ, *squamis* oblongis, ciliatis, bifarié imbricantibus, quibusdam persistentibus, basesque ramulorum juniorum laxé ambientibus. *Folia* valde copiosa, approximata, patentia, alterna, lanceolato-oblonga, 4-6-pollicaria, subcarnosa, ad lucem visa minutim pellucideque punctulata, acuminata, basi cuneata et per petiolum leviter decurrentia, remoté denticulata, dentibus subulatis, incrassato-subglandulosis, lætè viridia, suprá lucida, novella rufescentia, ætate opaciora, subtus pallida, penninervia, costâ gracili, nervis obliquis, alternis, venis reticulatis. *Petiolus* teres, gracilis, suprá sulcatus, pollicaris, basi inarticulatâ, simplici. *Stipulæ* nullæ, nec ullum earum vestigium. *Flores* magni, admodum fragrantes, nutantes, axillares, solitarii, vel sparsi circum basin ramorum novorum, globoso-campanulati, pollicem transversum emetientes, ex albo flavicantes, extus versus basin sæpe purpurascentes. *Sepala* novem, ternario ordine disposita, ovato-rotundata, obtusa, crassa et subcarnosa, integerrima, interiora sensim minora. *Aestivatio* laxe imbricata, globosa. *Pedunculus* teres, laxus, gracilis, bipollicaris, æqualis, basi sæpius squamulâ gemmaceâ mâ alterave munitus. *Masculorum* (fig. 6, 7.) *stamina* (fig. 8.) circiter quadraginta, calyce parum breviora, clavata, aggregata in acervum ovatum super receptaculum carnosum, leviter elevatum (filamentorum bases connatæ?). *Filamenta* brevia, erecta, subulata, alba, carnosa. *Antheræ* ovatæ, compressiusculæ, obtusæ, disco carnosæ, utrinque dehiscentes loculo angusto, longitudinali, extrorsum verso; pollen albidum. Nullum pistillorum rudimentum. *Foeminei* (fig. 1, 2, 3.) masculis parum majores, sepalaque exteriora saturatius colorata. *Ovaria* (fig. 4, 5.) admodum minuta, numerosa, lenticularia, extrorsum obliqué acuta, subtus gibboso-convexa, sursum notata marginulâ rectilineâ, sessilia, spiraliter et densissimé aggregata super receptaculum carnosum, oblongum, sepala majora subæquans. *Ovula* duo minutissima, lateri loculi marginulæ istæ obverso adfixa, obliqué pendula. *Stylus* nullus. *Stigma* sessile, carnosum, hyalinum, scabriusculum, perpendiculare, utrinque liberum, apice obtusum leviterque recurvum, basi ovario adpressum, medio apiculæ hujus insertum. *Baccæ* (fig 9, 10.) ovato-subreniformes, sessiles, coccineæ, laeves, nitidæ, magnitudine Ribesiæ majoris, valde numerosæ, superné apiculâ lineolaque brevi, fuscâ, decurrente notatæ, biloculares, dispermæ, dispositæ in *spicam* laxé pendulam, digitum crassam, clavatam, sex ad novem pollices longam, insidentem pedunculo gracili, apice leviter incrassato, cæterum vero immutato. *Rachis* carnosa et crassa, punctulata, flavicans. *Caro* pallidé rubra, mollis, lineam crassa. *Semina* (fig. 11, 12, 13, 14.) duna, fusca, horizontaliter unum super alterum posita, *septo* pulposo separata, reniformia, leviter complanata, lateribus convexis, obtusa, hilo sursum, i. e. versus apiculam verticis baccæ spectante. *Integumentum* exterius crustaceum, laeve, sub lente minutim puncticulatum; *interius* tenuissimum, perispermum arcté involvens. *Perisperma* album, carnosum, teres, in figuram semilunarem curvatum, extremitatibus obtusis approximatis, dorso convexo notatum fasciâ vascu-

lorum tenui fuscâ; alterâ extremitate exsculptum cavitate minutâ, embryoniferâ, superficiei apicis proximâ. Embryo minutissimus, subglobosus, albus. *Radicula* centrifuga?

Observation.

This is a very handsome, fragrant plant. The natives eat the fruit. The embryo is so minute, that I have not been able as yet to dissect it properly; but I trust, that the plants, which I brought with me from Nipal to the Hon. Company's botanic garden and which are at present thriving very well, will enable me to determine its structure at some future period.

KADSURA PROPINQUA, *Wall.* TAB. 15.

Dioica, polyandra; *floribus* subfasciculatis, erectiusculis; *pedunculis* petiolum vix æquantibus, medió bracteatis; *antheris* sessilibus, immersis; *baccis* dispermis, spicatis; *rachi* tuberculosâ.

Observavi in monte Sheopore, rarinsque in collibus ad Sankoo, Napaliæ. Floret Majo et Junio; fructus maturescunt Octobre.

Frutex ramosissima, valubilis, glaberrima, ramis, gemmisque ut in priore specie. *Folia* interstitiis duplo vel triplo longiora, ovato-lanceolata, in acumen desinentia longum et gracile, remoté denticulata, interque dentes obsoleté sinuata, nunc fere integerrima, basi rotundatâ vel acutiusculâ, carnosa, firma et fragilia, 5-6-pollicaria, lucida, subtus pallida, nervis capillaceis versus marginem anastomosantibus, siccitate reticulata, ad lucem visa minutim punctulata; in plantis novellis luxuriantibus maculis pallidé viridibus subalbicantibus variegata.—*Petiolus* crassiusculus, brevis, semipollicaris, coeterum ut in antecedente. *Stipulæ* nullæ.—*Flores* axillares, solitarii vel geminati, illis dimidió minores, fere inodori, leviter nutantes, patentissimi, initio pallidé flavi, dein aurantiaci, dioici, æstivatione in globulum pisi magnitudinis imbricati. *Pedunculus* teres, petiolum subæquans, nunc tertiâ parte brevior, basi squamulis duabus lanceolatis, emarcidis, deciduis, versusque medium instructus *bracteolâ* carnosâ, semiamplectente, ovatâ, obtusâ patulâ, dorso convexâ, persistente. *Masculorum* (fig. 1, 2.) *sepala* novem, ternario ordine alternatim disposita, patentia; *exteriora tria* valde parva, ovata, inæqualia; reliqua subrotunda, crassa et coriacea, membranaceo-marginulata, sub lente punctulata, prioris speciei dimidio minora.—*Antheræ* (fig. 3, 4, 5.) parvæ, lanceolatæ, sessiles, duodecim ad quindecim, tessellatim immersæ receptaculo carnoso, subgloboso, demum valvularum triangularium adinstar hiantes leviterque reflexæ, biloculares, dorso carnosæ, apice liberæ, loculis, parallelis, distinctis lateraliter dehiscentibus.—*Foeminei* (fig. 6, 7.) quoad sepala masculis simillima.—*Ovaria* (fig. 8.) minima, valde numerosa, carnosa, ovata, suprá et intus marginulâ parum elevatâ notata, imbricata in acervulum subglobosum. *Stylus* nullus. *Stigma* prioris.—*Baccæ* (fig. 9, 10.) globosæ, carnosæ, numerosæ, laeves, coccineæ, parum minores quam in antecedente, fabricâ vero internâ omnino similes, dispositæ in spicam brevé pedunculatam, sexpollicarem, cylindricam, rachi parum incrassatâ, valde asperâ propter tubercula numerosa baccas adfigentibus.

Observation.

This is altogether a smaller species than *K. grandiflora*; particularly the flowers. It approaches to *Schisandra coccinea*, Mich. Flor. boreal. amer. 2. p. 219. t. 47. and Curt. bot. mag. 34. n. 1413. The flowers are at first pale yellow, but become afterwards deep orange-colored, especially the inner leaflets. The male receptacle is globular, fleshy,

sessile, not larger than a pepper-corn before expansion, marked with from twelve to fifteen superficial pores, which are arranged in a quincunx or decussated manner from the basis to the top; in these the anthers are completely sunk, their two-lobed apexes being only visible above the surface. Immediately after expansion these pores open, their lower sides turning gently downwards and resembling so many small, triangular, acute, valves, each having a distinct, two-lobed, two-celled anther attached to its inner or upper surface, its apex being free and somewhat shorter than that. When the anthers burst, each cell appears to be two-lobed. It may perhaps be advantageous to consider the receptacle as the connate filaments; and the above-mentioned antheriferous valves, as the free apices of these latter.

KADSURA JAPONICA, *Dunal.*

Dioica, polyandra; *floribus* subsolitariis erectiusculis; *pedunculis* petiolo longioribus; *antheris* sessilibus, immersis; baccis dispermis, capitatis.

Kadsura, Jussieu, in Annal du Mus. 16. p. 340.

Kadsura japonica, Dunal Anonac. 57.—De Cand. syst. nat. 1. 466.

Uvaria japonica, Linn. spec. plant. 756.—Thunb. jap. 237.

Uvaria heteroclita, Roxb. Mss. et Icon.

Drymis, F. Hamilton, Icon. pict. in hort. bot. Calcuttæ asservata.

Futó Kádsura, sive ***Sáne Kádsura***, aliis ***Orenj Kádsura***; ***Kenkoo***; Kaempf. amoen. p. 476 et 785. tab. 477.

Crescit in montosis prope Sylhet, ubi detexit beatus M. R. Smith.—Specimina tam viventia quam sicca misit collector horti hujus F. De Silva.—Floret sub initio pluviarum; fructus maturos profert Octobre, Novembre.—In horto botanico Calcuttæ floruit primâ vice Junio, 1823.

Observation.

This interesting shrub does not grow in Nipal; it has hitherto only been found in Japan and at Sylhet, on the eastern frontiers of Bengal; probably also at Gualpara, where I conjecture that my worthy friend Dr. Hamilton met with it. I have had opportunities of examining it both in its cultivated and dried states. It is extremely like the preceding species (for which reason I have called the latter *K. propinqua*); nor can I distinguish it except by the capitate berries, and by the other, less prominent marks, which I have introduced in the specific character.—Kaempfer's figure is excellent.

COLQUHOUNIA. *Wall.*

Calyx cylindricus, fauce aequali, 5-dentatâ: fructifer clausus. *Corolla* bilabiata; labium superius fornicatum, bidentatum; inferius trilobum, lobis lateralibus fauci ampliatae utrinque insertis, intermedio minore, integro. *Stamina* adscendentia; *antherarum lobi* divaricati, nudi. *Stigma* bilobum, lobo superiore breviore. *Ovula* solitaria, pendula! Achenia maxima, alata. *Perispermum* copiosum. *Embryo* erectus.

Habitus. Frutex latè volubilis, supernè tomento stellato, ferrugineo: rami juniores alternatim compressi, subarticulati. *Folia* ovalia, serrata, scabriuscula, odore debili aromatico. *Flores* pulchri, coccinei, fasciculati, axillares, subverticillati, nunc subracemosi.

Syst. Linn. ***Didynamia Gymnospermia.***

Ordo. natural. ***Labiatæ.***

Dixi in honorem amici aestumatissimi Roberti Colquhoun, Scotiae Baronetti, historiae naturalis fautoris indefessi, qui hortum botanicum Calcuttae ditavit plurimis plantis viventibus, seminibus, speciminibus, nec non observationibus, phytographiam regionis Kumaon spectantibus.

COLQUHOUNIA COCCINEA, *Wall.* TAB. 6.

Legi in variis montibus Napaliæ: Chesapanee, Chandaghiry, Sheopore; etiam in sylvis minus elevatis Suembonath, Gokurna, &c. *Floret* sub fine pluviarum et tempore frigoris, ab Octobre usque ad Februarium. Fructus maturescunt Martio.

Nomen Parbuttense *Aesinallae*; Newarrense *Goontomah*.

Frutex ampla super alias frutices arboresque minores volubilis. *Rami* longissimi, orgyales, obsoleté tetragoni, pennam cygneam ad digitum crassi, a punctis minutis, copiosis scabriusculi, tomento parco hinc inde conspersi, diluté ferruginei; *juniores* gracillimi, obsoleté 4-angulares, sulcis duobus oppositis notati, ad insertionem foliorum alternatim dilatato-complanati lineâque elevatâ annulari subarticulati, tomento vestiti denso, ferrugineo, lepidoso, stellato, ciliato, friabili. *Folia* opposita, ovata, acuminata, 3-5-pollicaria, vetusta duplo majora, patentia, obtusé crenulata, basi acuta integriora, utrinque a tomento parco aspernla, supra atro-viridia, rugosa, opaca, subtus pallida, costâ nervisque suboppositis, arcuatis, prominentibus, tomentosis, venis transversim reticulatis; novella densissimé tomentosa, incana. *Petioli* unguiculares, semiteretes, tomentosi, suprá plani. *Flores* (fig. 1.) magni, inodori, fasciculati, plerumque ternati, axillares, subverticillati; verticilli nunc brevissimé pedunculati, saepius fere sessiles, in ramulis junioribus approximati, subracemosi. *Pedunculi* teretes, patentes, petiolo triplo breviores, tomentosi, basi, nunc quoque medio, *bracteolis* duabus oppositis, linearibus, persistentibus muniti. *Calyx* (fig. 2.) basi subcylindricus, sursum ampliatus et subcampanulatus, membranaceus, scariosus, persistens, semuncialis, tomentosus, intus laevis, nitidus, obsolete 5-nervius, reticulatus, leviter incurvus, dorso parum convexior, limbo 5-dentato, patentiusculo; dentibus triangulari-ovatis, acutis, uni-nerviis, post florescentiam clausis et subvalvatis. *Corolla* (fig. 4.) coccinea, calyce duplo longior, villis canis, mollibus, brevibus, hyalinis, articulatis extus obsita; tubus brevis, cylindricus, inclusus, mox ampliatus in faucem ventricosam, lateribus leviter compressam, subtus foveolatam, perviam, nudam. *Limbus* bilabiatus; *labium superius* adscendens, ovatum, fornicatum, apice bidentatum, dentibus lanceolatis, obtusiusculis, basi dorsi leviter contracta; *inferius* majus, patens, tripartitum, lobis integerrimis obtusis, lateralibus obliqué ovatis, leviter recurvis, fauci utrinque insertis et quasi interlabialibus: intermedio duplo fere illis breviore, descendente, concaviusculo, lingnaeformi, citius emarcescente. *Stamina* (fig. 5.) quatuor, absque rudimento quinti, intra galeam adscendentia, haud plane ab illa recondita, sinubus (more familiæ, ut dudum monuit cel. R. Brown in Prodr. Fl. Nov. Holl. I. p. 500.) interlabialibus, primariisque labii inferioris, intra faucem inserta. *Filamenta* crassiuscula, linearia, villo-ula, colorata, apice parum dilatata et incurva; superiora duo breviora. *Antherae* parvae, oblongae, nutantes, purpurascentes: lobi divaricati (sursum et deorsum), nudi, obtusi, rimâ continuâ longitudinali et quasi communi dehiscentibus, *polline* flavo majusculo. *Ovaria* quatuor, oblonga, planiuscula, apice parum obliqua et crenulata, imposita *disco hypogyno* annulari, angusto, obsoleté quadrilobo, flavicanti, centro parum elevatiore subconico; unilocularia, monospora: *ovulum* teres, ex apice placentulae erectae, fungosae pendulum! *Stylus* filiformis, laevis, purpurascens, longitudine staminum, unacum illis adscendens. *Stigma* bilobum, lobis subulatis acutis, patulis, superiore dimidio breviore. *Achenia* (fig. 7.) quatuor (rarius unum duove cassa), grandia, calyce (fig. 6.) persistente, haud aucto, dentibus conniventibus subvalvatis clauso parum breviora, ejus fundo, supra discum hypogynum fere immuta-

tum inserta, **erecta**, glabra, exsucca, basi obalia, conniventia, **convexiuscula, intus obtusé** carinata **subtrigona**, apice terminata alâ membranaceâ, parum recurvâ; oblongâ, extremitate subtruncatâ hinc convexâ, inde acutâ, levissimé crenulatâ, margine altero rectilineo, subsulcato, crassiore, altero (exteriore) convexo scindente; epidermide obducta tenuissimâ, fuscescente: 1-locularia 1-sperma, indehiscentia. *Semen* (fig. 8, 9.) obovatum, compressiusculum, obtusum, basi acutiusculum, album, laeve, infra apicem suspensum *funiculo* longiusculo, descendente supra basin placentae fungosae, erectae, liberae inserto. *Integumentum* simplex, tenuissimum. *Perispermum* crassiusculum, carnosum, album, embryonem arcté involvens, conforme. *Embryo* (fig. 10.) ovatus, planus, erectus. *Cotyledones* maximae, ovatae, obtusae, basi subcordatae. *Plumula* inconspicua. *Radicula* conica, acuta, brevis, infera.

Observatio.

Genus pulcherrimum, *Leucadi*, Burm. (R. Brown l. cit. 504.) et *Dracocephalo* quodammodo affine, ab utroque et a tota fere familia diversum fructus magnitudine et forma, positione ovuli penduli seminisque suspensi, et perispermo copioso. Odor foliorum partiumque novellarum citrinus, debilis. *Wall. loc. cit.*

Since the preceding account was sent home to the Linnean Society, from whose Transactions I have almost literally copied it, I have found a second species growing on the summit of Sheopore, blossoming during the height of the rainy season, which has also been brought to me from the far more elevated regions towards Gosain-Than, from Kumaon and Sirinagur. This shrub is exactly like the preceding in height and stature. All its upper parts are very densely clad in stellate, soft, separable tomentum; becoming somewhat smoother by age. The leaves are ovate, attenuato-acute, obtusely and unequally dentate, entire and roundish at the base, four or five inches long, pubescent above, covered underneath with white tomentum. *Petiols* hoary.—*Flowers* resembling those of the former, disposed in small spikes. This plant may be called ***Colquhounia vestita***.

BEAUMONTIA, *Wall.*

Echitidis species, Roxb.

Calyx quinquephyllus, foliaceus, coloratus. *Corolla* campanulata, *tubo* brevi *faucequ*e esquamatis, laciniis subaequilateris. *Stamina* filiformia laxa, *antheris* subexsertis, sagittatis, medió stigmati adhaerentibus, lobis posticis polline vacuis. *Ovarium* biloculare, suffultum *annulo hypogyno*, quinquelobo. *Stigma* oblongum, apiculâ bifidâ. *Folliculi* duo maximi, cohaerentes. *Semina* ad umbilicum sericeo-comosa.

Classis Linneana: *Pentandria monogynia*.

Ordo naturalis, *Apocyneae verae*.

Habitus. *Frutex* maximus, volubilis, lacté copioso farctus. *Folia* opposita, perennantia, magna, oblongo-obovata, juniora, uti rami novelli, ferruginei, ciliis axillaribus et interpetiolaribus subulatis, sphacelatis. *Cymae* terminales, bracteatae, pedunculis brevibus articulatis parum ramosis, dichotomis. *Flores* maximi, istos Portlandiae aemuli, nivei, speciosi, fragrantes. *Sepala* magna, bracteiformia, rubicunda, vasculosa. *Fructus* cylindricus, pendulus, cucumerinus, giganteus; demum in duos secedens folliculos. *Coma* ampla, sericea.

Genus hinc *Parsonsiae* illinc *Lyonsiae* affine, ab illâ diversum figurâ corollae, ab hacce

corollâ fructuque. Nominavi in honorem Dominæ Dianæ Beaumont, scientiæ botanices et horticulturæ in Anglia devotissimæ earumdumque fautrici munificæ, cujus benignitati hortus Calcuttensis plurimas debet plantas exoticas præcipue Europaeas.

BEAUMONTIA GRANDIFLORA, *Wall.* TAB. 7.

Echites grandiflora, Roxb. hort. beng. p. 20.

Incolit sylvas depressas montanasque Bengalæ orientalis, Chittagong, Sylhet, coet. Etiam habui e Noakote, Napaliæ. *Floret* a mense Februario usque ad finem Aprilis. *Fructus* maturescunt post integram annum.

Nomen bengalense: *Bhootura Luta*, propter formam florum, istos Daturæ quodammodo referentium; nomen quod etiam convenit Büttneriæ asperæ, Colebr. (vid. Roxb. flor. ind, 2. p. 383.)

Frutex ramosissimus, prævalté super arbores volubilis, nunc juxta terram longé latéque extensus, valde frondosus, trunco crasso, cortice cinerascente, spongioso. *Rami* longissimi, nutantes, robusti, valde lactescentes, cylindrici, cinerascentes, dum juniores tomento ferrugineo, copioso, brevi, mollissimo obtecti, supernè obsoletè quadrangulares. *Folia* opposita, interstitiis longiora, patentia, subdependentia, oblongo-obovata, apice rotundata cum acumine brevi, angusto; basi parum angustata et acutiuscula; undulata, integerrima, suprà lucida, atro-viridia, laevia, subtus pallidiora, opaca, costâ crassâ, nervisque elevatis, subopppositis, obliquis, ad margines anastomosantibus, albicantibus, puberulis, coeterum glabra, venis magnis, inter nervos transversalibus, parallelis, approximatis; chartacea, sex- ad octopollicaria, quin, in luxuriantibus nempe ramis, pedalia; *juniora* subtus, juxta vassorum tractus ferruginea. *Petioli* teretes, crassi, semipollicares ad pollicares, suprá leviter sulcati, æquales, pubescentes, nunc ferruginei. *Stipulæ* nullæ nisi corpuscula quædam glandulosa, subulata, sphacelata, in omnibus axillis recondita, quandoque serie simplici trans ramum migrantia. *Cyma* magna terminalis, ovata, octo- ad duodecimflora, rarius subaxillaris foliorum paris supremi, ad basin sæpe aucta foliolis aliquot parvis floralibus lanceolatis, fere sessilis. *Pedunculi* breves, crassi, articulati, bis terve dichotomi; *pedicelli* pollicares, subcomplanati, bi- triflori. *Bracteæ* magnæ, membranaceæ, sparsæ, plerumque solitariæ ad divisuras, subimbricatæ, villosæ, deciduæ, ovatæ, acutæ, undulatæ, semipollicares, e viridi rufescentes, venis reticulatis, ferrugineis. *Flores* plerumque terni, nivei, initio parum viridescentes, demum flavicantes, admodum fragrantes, quinquepollicares. *Calyx* (fig. 1.) magnus, quinquephyllus. *Sepala* ovato-lanceolata, cuspidato-acuta, undulata, villosa, pallidé viridia vel albicantia, ferrugineo-reticulata, erectiuscula, subimbricantia, bracteis figura et colore similia. *Glandulæ* subulatæ, minutæ intra singulum sepalum serie regulari ordinatæ, basi corollæ adpressæ. *Corolla* coriacea, crassa, campanulata, extus pubescens, intus laevis, nitida, longitudinaliterque nervoso-sulcata, quatuor pollices longa, *limbo* patente, quinquefido, tres pollices emetiente, fauce amplâ, nudâ, pervia; deorsum sensim attenuata basique contracta in *tubum* viridescentem, semipollicarem, intus a filamentorum basibus decurrentibus costatam, calyce parum breviorem. *Laciniæ* ovatæ, acutæ, planæ, patentes, lateribus subæqualibus, basi parum contractæ, æstivatione imbricatæ in conum ventricosum. *Stamina* (fig. 2.) parallela, extra faucem parum prominula, flaccida. *Filamenta* filiformia, carnosa, laevia, alba, leviter compressa, basi tubo intus adnata, stylo parumper breviora, ideoque parum curva, apice leviter incrassata. *Antheræ* ovato-sagittatæ, acuminatæ, dorso gibbosæ et carnosæ, stigma occultantes, huicque medio adnatæ, corpus formantes ovatum, leviter pentagonum, acutum; utrinque longitudinaliter loculo angusto dehiscentes; lobis posticis longis, subulatis, conniventi-incurvatis, liberis, polline vacuis. *Pollen* pallidé flavescens. *Ovarium* parvum, ovatum, pilosulum, biloculare, polysporum, *ovulis* numerosis, insertis placentæ interiori, carnosæ, septo adnatæ; immersum et fere occultum *annulo*

hypogyno carnoso, convexo, subquinquelobo, flavescente. *Stylus* (fig. 3.) filiformis, laxus, apice clavatus dilatatusque in *stigma* oblongum carnosum, glutinosum, medio antheras adfigens, apiculâ bilobâ terminatum. *Folliculus* (fig. 4.) maximus, oblongus, subcylindricus, obtusus, viridis, demum lutescens, glaber, nunc parum tuberculatus, basi retusus, pedunculo lignoso crasso brevi insidens, pendulus, pedalis, diametro tripollicari, lignoso-coriaceus, plenâ maturitate longitudinaliter dehiscens in duos lobos (fig. 5.) æquales, extus convexos, intus planos et parallelos, parum distantes. *Caro* valde crassus, coriaceo-spongiosus, longitudinaliter lignoso-fibrosus, initio rufescens, demum fuscus. *Dissepimentum* nil nisi latera interiora utriusque lobi incurva, plana, parallela, crassa, coriacea, e basi usque ad apicem rimâ longitudinali intus placentiferâ fissa. *Loculamentum* in singulo lobo unicum, oblongum, tunicâ valde nitida, lævi, albâ vestitum. *Receptaculum* (fig. 6.) tenue, membranaceum, sublineare, foraminibus pluribus longiusculis pertusum, retiforme, apicibus affixum *placentæ* gracili, longæ, dehiscentiâ demum liberum.—*Semina* (fig. 7, 8.) valde numerosa, densè imbricata, pendula, cuneiformia, pollicaria, angulata, papilloso-rugosa, fusca, *raphi* longitudinali ventrem, percurrente umbilico parum contracto et excavato, comoso. *Membrana* exterior fusca; subspongiosa; *interior* tenuissima, albumini arctè applicata. *Coma* densa, longa, sericeo-splendens, setulâ minutâ, ex umbilico ortâ, quasi stipitata, semine ipso duplo longior.—*Albumen* conforme, carnosum, lacteum. *Embryo* (fig. 9, 10.) niveus, carnosus, lactescens. *Cotyledones* maximæ, crassæ, oblongæ, obtusæ, dorso convexiusculo venulosæ. *Radicula* supra, cylindrica, brevis.

Observation.

This truly magnificent plant was introduced into the Hon. Company's botanic garden by the late Mr. John Roxburgh from Chittagong in the year 1810, and has since grown to an enormous size, some of the individuals overtopping the largest trees, with stems measuring at the base from 11 to 13 inches in circumference. It is at all times extremely ornamental; chiefly, however, when covered to excess by its ample bunches of superb, snow-white, most delightfully fragrant blossoms, when it is also clothed with a profuseness of dark green, shining, large leaves. The fruit is probably the largest of the whole tribe, being twelve inches long, sometimes even longer, and proportionally thick, hanging down perpendicularly, not unlike like a large green cucumber. It is produced in great plenty: its internal structure is extremely elegant, the seeds being very numerous, and beautifully arranged, each furnished with a long, silky, extremely soft and delicate coma. The shrub is easily propagated both by seeds and layers; in short, I know of no vegetable production, more noble, more desirable, more ornamental in all its stages than the one I have now described, and which, I hope I have been so fortunate as to succeed in introducing into the gardens of Great Britain.

HEMIPHRAGMA, *Wall. in Act. Linn.* 13. p. 611.

Calyx 5-partitus. *Corolla* infundibuliformis: limbo patente 5-fido subæquali. *Stamina* 4, æqualia, antheris nudis, liberis. *Stigma* simplex, acutum. *Bacca* globosa, exsucca, incompletè 2 locularis, polysperma, *dissepimento* placentifero sursum fisso.

Syst. Linn. *Tetrandria Monogynia*, floribus monopetalis, monocarpis, inferis. An potius *Didynamia Angiospermia?*

Ord. Natural. *Scrophulariuae*, Brown.

Habitus. Herba gracilis, repens pilosula. *Folia* duplicis indolis: caulina et ramea orbiculato-reniformia, opposita, subsessilia, dentata; alia acerosa, gracillima, conferta

in fasciculos petiolatos. *Flores* solitarii, parvi, rosei, brevé pedicellati, ebracteati, alterni vel oppositi in axillis foliorum majorum, vel terminales fasciculorum. *Baccae* globosae, ruberrimae, nitidae.

HEMIPHRAGMA HETEROPHYLLUM, *Wall. loc. cit.* 612.—TAB. 8.

Planta sat communis in montibus Napaliae, saxatilis, florens et fructifera toto fere anno, praecipue ab Octobre ad Februarium.

Caulis gracillimus, pedalis bipedalisque, prostratus, per distantiam pollicum trium vel quatuor radicans, radiculis simplicibus, pallidis, fibrillosis; obsoleté quadrangularis, epidermide fuscescente, secedente. ***Rami*** pauci versus extremitatem caulis, tenerrimi, breves, indivisi, oppositi, acutanguli, asperuli a pilis brevibus, articulatis, patentibus, hyalinis. ***Folia*** biformia. ***Caulina*** ovato-cordata, subreniformia, plana, patentia, membranacea, citius emarcescentia, opposita et fere amplexicaulia, brevissimé petiolata, unguicularia ad pollicaria, remota, interdum pollices plures distantia, obtusa, acutiusculé et lato-dentata, lobis baseos integris, rotundatis; utrinque pilosula, subtus trinervia leviterque reticulato-venosa, siccitate ferruginea; superiora et ramea ovata, vel suborbiculata, pauca, bracteiformia, illis ter quaterve minora. ***Folia alia*** subulato-acerosa, bi- vel trilinearia, semiteretia, suprá sulcata, pilosula, acuta, lacté viridia, nitida, sessilia, undique patentia, 20-30-circiter conferta in *fasciculos* (fig. 1.) ovatos, unguiculares, brevé petiolatos, patentes, axillares et oppositos foliorum caulinorum, vel terminales. ***Petioli*** foliorum majorum vix bi-lineares, suprá sulcati, pilosuli, lineolâ elevatâ tenerrimâ caulem, vel ramum ambientes. ***Stipulae*** nullae. ***Flores*** (fig. 2, 3.) parvi, solitarii, axillares foliorum, vel terminales fasciculorum, *pedicello* insidentes brevissimo, villoso, ebracteato. ***Calyx*** (fig. 4.) subovatus, persistens, densé villosus, profundé quinque-partitus, *laciniis* patentiusculis, linearibus, purpureo-acutis. ***Corolla*** (fig. 5.) rosea, calyce duplo major, infundibuliformis, glabra; *tubus* obsoleté tetragonus, mediô ventricosus, flavescens; *limbus* patens, quinque- raro sexfidus, admodum obscuré bilabiatus, aestivatione imbricatus, *laciniis* ovalibus, obtusis, nunc subretusis, duabus superioribus parum latioribus; *faux* pervia, nuda. ***Stamina*** quatuor, æqualia, parum supra faucem elevata, medio tubi inserta; *antheris* ovatis, erectis, parum conniventibus, utrinque longitudinaliter dehiscentibus, nudis. ***Pistillum*** staminibus parum brevius; *ovarium* (fig. 6, 7.) subrotundum, laevé, *disco hypogyno* exiguo, annulari, flavicante suffultum, biloculare, polysporum, *ovulis* insertis placentae, dissepimento apice minutim perforato utrinque adnatae; *stylus* teres, brevis; *stigma* leviter incrassatum, simplex, acutum. ***Bacca*** (fig. 8, 9, 10.) ovato-globosa, magnitudine pisi, stylo persistente coronata, suffulta calyce patentissimo, haud aucto, coccinea, laevis, nitida, inscripta lineis gracillimis impressis quatuor, e vertice cruciatim decurrentibus, commissuras valvarum mentientibus, cultro difficilius in totidem valvulas partibilis, nunquam sponte dehiscens; *membrana exterior* tenuissima, chartacea; *caro* spongiosa, pallida, basi copiosior, vertice tenuior. ***Dissepimentum*** incompletum, membranaceum, tenuissimum, vertice perforatum hiatu inversé triangulari, aetate ultra medium baccae deorsum extenso. ***Placentae*** duae, semilunato-bicornes, spongiosae, convexae, hiatui dissepimenti utrinque adnatae, ibique confluentes, medio crassiores, sursum attenuatae, rugosulae. ***Semina*** numerosa, minuta, pallidé ferruginea, ovata, sessilia, punctata, mox soluta fundumque baccae utrinque occupantia. ***Integumentum*** simplex. ***Perispermum*** carnosum, aqueo-pallidum, tenue, semini conforme. ***Embryo*** dicotyledoneus. ***Radicula*** centripeta.

Observatio.

Plantula elegantissima *Scrophularinis* potius quam *Gentianeis* Juss. adsocianda, ab his discrepans corollâ staminibusque, ab illis qu adammodo abludens structurâ fructus.

An *Solanearum* civis? Nomen imposui a septo incompleto, quasi dimidiato.—*Wall. l. cit.*

To the preceding account, which is almost literally extracted from the 13th Vol. of the Linnean Transactions, I have nothing to add, except that I have hitherto found it impossible to make the plant live in Bengal.

SCHOEPFIA FRAGRANS, *Wall. in Roxb. flor. ind.* 2. *p.* 188. TAB. 9.

Foliis lanceolatis, acuminatis; racemis axillaribus, solitariis; ovario triloculari; drupa ovatá, mono-sperma.

Nomen Parbutteanum: *Haloomaphe.*

Crescit in sylvis minus elevatis Napaliæ, a Bechiaco, usque ad convallem magnam, ubi satis frequens. Etiam incolit loca magis elevata, septentrionalia. Floret sub pluviis; fructus maturescunt Decembre-Martio.

Arbuscula, *trunco* irregulari, diametrum pollicum tres vel quatuor emetiente, *cortice* crasso, spongioso, molli, rugoso, ex albido flavescente: *ligno* levi, cinereo. *Rami* teretes, albicantes, leviter flexuosi, uti reliquæ partes glaberrimi; *gemmæ* copiosæ, parvæ, squamis constantes numerosis. *Folia* sparsa, approximata, interstitiis pluries longiora, bi-tripollicaria, integerrima, lanceolata, acuminata, basi acuta, lateribus parum inæqualia, subcarnosa, fragilia, avenia, suprá atro-viridia, lucida, subtus pallida, nervis aliquot obsoletis, obliquis, capillaribus, ad marginem reticulatis; ætate flavicantia. *Petioli* trilineares, teretes, suprá sulcati, basi articulati, siccitate mox decidui. *Stipulæ* nullæ. *Flores* (fig. 1, 2.) flavi, fragrantissimi, dispositi in *racemos* simplices, axillares, subsessiles, tenues, folio dimidio breviores. *Pedunculus*, uti *rachis*, gracilis, teres, nudus, basi circumdatus squamulis gemmaceis, nunc parum ultra adscendentibus, bracteolas mentientibus crassas, ovatas, subpedicellatas, gibbosas. *Pedicelli* sex vel septem, filiformes, subclavati, unguiculares. *Calyx* (fig. 3.) parvus, duplex (judicio authorum) nempe monophyllus: alius inferior *bractea calyciformis*, mihi) pedicelli apici insertus ovariumque suffulciens, divisus in lobos duos tresve ovatos, acutos, inæquales, membranaceo-marginulatos, intermedio majori nunc bi- vel tridentato: alter *(calyx verus)* superior, obsoletus, margine angustissimo, integerrimo ovarium coronans. *Corolla* (fig. 4.) subcarnosa, infundibuliformis: *tubus* cylindricus, unguiculatis, basi obscuré pentagonus, apice leviter ampliatus in *limbum* quinquefidum, laciniis lanceolatis, acutis, æstivatione valvatis, vix inæqualibus: *faux* pervia, ad basin singulæ laciniæ munita fasciculo pilorum succulentorum minuto, erecto, filamentum occultante. *Filamenta* brevissima, erecta, subulata, laciniarum basi, infra acervulos istos pilorum inserta, iisdemque opposita, inde per tubum lineis capillaceis decurrentia. *Antheræ* ad faucem corollæ erectæ, biloculares. *Ovarium* (fig. 5, 6.) carnosum, oblongum, calycibus multo longius, lineis tres exactiens, vertice gerens discum carnosum, latum, conicum, obtusum, intra corollæ tubum prominulum: triloculare, trisporum. *Ovula* cylindrica, loculis breviora, ex apice axis pendula. *Stylus* filiformis, tubi longitudine. *Stigma* clavatum, carnosum, parvum, trilobum. *Drupa* (fig. 7, 8.) baccata, oblonga, obtusa, lævis, ex albo flavescens, magnitudine fere fructus Olex sativæ, calyce sic dicto inferiore, persistente suffulta, vertice in cavitate vestigiis insertionis corollæ et calycis superioris fere obliteratis. *Caro* mollis, linearis crassus. *Putamen* (fig. 9.) tenue, chartaceum, oblongum, album, lineis numerosis, parallelis, longitudinalibus, elevatis, anastomosantibus notatum, uniloculare, monospermum, vertice umbilicatâ carni arctius adhærens. *Perispermum* (fig. 10.) amygdalinum, album, putamini conforme, parum rugosum. *Integumentum* simplex, tenue, ferrugineum, spongiosum, ad verticem seminis notatum vestigiis linearibus ovariorum abortivorum et axis ovarii. *Embryo* (fig. 11, 12.) minutus, lacteus, cylindricus, rectus, ad verticem perispermi locatus, inversus. *Cotyledones* parallelæ, ovatæ,

obtusæ, dorso convexæ, dimidium ipsius embryonis emetientes. *Radicula* supera; subturbinata, lineam demidiam e superficie perispermi remota. *Plumula* inconspicua.

Observation.

Mons. de Jussieu has justly observed in an excellent memoire chiefly on the families of *Caprifoliaceæ* and *Loranthæ*, inserted in Annal. du muséum d' histoire naturelle, 12. p. 300, that this genus is the connecting link between those families, belonging, however, more properly to *Loranthæ*. I would add that it is nearly allied to *Santalaceæ* of Mr. Brown. The account which the first mentioned immortal botanist has given of the fruit, taken from the manuscript of the accurate Richard, as far as it goes, agrees exactly with the present species. The difference between the structure of the ovarium and that of the fruit has, however, not been noticed; and as Schreber describes the genus, as having a three-celled berry with several seeds, the number of the abortive ovula may perhaps vary. In my tree there are invariably found three ovula, one of which only comes to maturity; the other two are abortive, remaining attached to the upper end of the cavity of the putamen, as does also the axis of the ovarium, in the shape of withered, flattened threads. —*Haenkea*. Ruiz et Pavon flor. peruv. (not of the prodromus) belongs probably to this genus, as has been remarked by Schultes, in syst. veg. 5. p. viii.—The fruit bears some resemblance to *Rhysospermum*, Gaert. carp. suppl. p. 232, t. 224, which is the same as *Noteluea*, Vent. according to Mr. Brown, (prodr. nov. holl. 1. p. 523).—The perfume of the flowers is of a most delightful kind, and may be perceived on steeping them in warm water even long after they have been dried.—*Wall. loc. cit.*

SPHAEROCARYA, *Wall. in Roxb. flor. ind.* 2. 371.

Calyx quinquepartitus. *Petala* quinque, minuta, staminibus totidem alternantia. *Squamulæ* quinque, fimbriatæ, inter stamina laciniasque calycis. *Ovarium* absque ullo disco. *Stylus* indivisus. *Drupa* infera. *Nux* glabra, suturis destituta.

Systema Linneanum: *Pentandria monogynia*, sectione floribus superis, pentapetalis, fructu drupaceo.

Ordo naturalis: *Rhamnearum* sectio dubia, fructu infero, insuper abludens embryone inverso.

SPHAEROCARYA EDULIS, *Wall.* TAB. 10.

Haud rara in sylvis vallis Napaliæ montinmque vicinis. *Florct* Aprili, Majo. Fructt. Octobre.

Nomen Newarrense *Lushpoo*; etiam *Eal-Marisee*.

Nomen Parbuttense *Bun-Amb*.

Arbor frondosa et umbrosa, cortice cinereo. *Ramuli* teretes: juniores, foliaque tenella obtecta villis longis, sericeis, nitidis, copiosis. *Gemmæ* (fig. 12.) majusculæ, ovatæ, sericeo-pilosæ, squamis imbricatis rotundatis. *Folia* alterna, patentia, ovato-oblonga, acuminata, integerrima, basi acuta, marginibus subrecurvatis, suprá laevia, lucida, juxta nervos sulcata, subtus pallidiora, costâ nervisque paucis alternis, obliquis, villosis, elevatis, venis reticulatis; subcarnosa, tri- ad sexpollicaria, in luxuriantibus ramis usque ad novem-pollicaria, decidua, tempore florescentiæ germinantia. *Petiolus* vix semiunguicularis, convexus, suprá sulcatus. *Stipulæ* nullæ. *Racemi* solitarii, subsessiles, terminales vel axillares foliorum supremorum, densé villosi, bi- tripollicares. *Flores*

(fig. 1, 2.) pauci, alterni, virides, inodori, parvi et inconspicui, *pedicellis* insidentes brevibus, clavatis carnosis, nudis. *Calyx* superus, quinquepartitus, una cum corollâ emarcescens, persistens; *laciniæ* (fig. 3, 4.) triangulares, acutæ, apice villosæ, intus glabræ, patentes, vix semilineam longæ, aestivatione valvatæ. *Petala* quinque, minuta, ovata, obtusa, laciniis calycinis multo minora, infra fissuras calycis inserta. *Filamenta* quinque, brevia, erecta, glabra, petalis alternantia, basi laciniarum calycis inserta iisdemque opposita. *Antheræ* erectæ, biloculares, albæ. *Squamulæ* quinque minutissimæ, pilis fasciculatis succulentis barbatæ, inter filamenta et lacinias insertæ. *Ovarium* (fig. 5, 6.) inferum, clavatum, majusculum, nitidum, pubescens, vertice, intra florem, concaviusculâ, uniloculare, monosporum. *Ovulum* succulentum, oblongum, erectum, elevatum chordâ spirali, carnosâ, subdiaphanâ, fundo ovarii insertâ, perque canalem proprium angustum in cellulam oblongam, propriam ovuli conductâ. *Stylus* brevis, cylindricus. *Stigma* convexum, obsoleté bilobum. *Drupa* fig. 7, 8, 9.) pyriformis, pollices duas et demidium longa, sesquipollicem crassa, epidermide obtecta luteo-viridi, tenaci; extremitate superiore rotundata et excavata favcolâ centrali profundâ lacinias calycinas incrassatas, petala filamenta stylumque emarcida occultante; basin versus attenuata, cuneiformis; unilocularis. *Caro* pallidé fuscus, mollis, subglutinosus, tertiam pollicis partem crassus, fibroso-vasculosus. *Nux* (fig. 10, 11.) solitaria, magna, globosa, glabra, sine ulla sutura, cavitatem omnino replens eæque ferniter adhereus, hinc inde notata foveolis parvis carni arctius adhærentibus, vertice obsoleté apiculatâ, basi parum scabrâ perforata foraminulo exiguo. *Putamen* cinereum, vix lineam crassum, uniloculare, monospermum. *Perispermum* amygdalinum, album, nuci conforme, nsque ad medium perforatum canaliculâ obsoletâ e fundo seminis, prope foraminulum istud putaminis surgente, sursum obliteratâ, vestigium chordæ ovuli includente. *Integumentum* simplex, ferrugineum, tenue. *Embryo* albus, oblongus, brevissimus, intra verticem perispermi obliqué locatus. *Cotyledones* oblongæ parallelæ. *Radicula* supera, conica.

Observation.

The inhabitants of Nipal are very fond of the fruit of this tree, which however, to a European palate holds out but little temptation. The wood is nearly white, of a firm texture, and appears to me suited to the work of the cabinet maker; it is used, only, for firewood and posts. The direction of the ovulum and that of the embryo are directly contrary, the former being decidedly erect, while the latter is pendulous.—*Wall. loc. cit.*

PASSIFLORA NAPALENSIS, *Wall.* TAB. 11.

Fruticosa, scandens, laevis; *foliis* indivisis, integerrimis, ovato-cordatis, acutis, glaucis, basi subtus petiolisque medió glandulosis; *pedunculis* axillaribus, bi- trifloris, bracteolis sparsis, subulatis; *perianthii* foliolis oblongis, alternis quinque angustioribus.

Crescit rarius in sylvis convallis Napaliæ ad Pusputnath, Nag-arjhoon, etiam montis Chandaghiry. Floret Junio, Augusto. Fructus maturescunt versus finem pluviarum.

Frutex tenuis, ramosa, glaberrima, scandens et volubilis. *Caulis* gracillimus, cortice tectus gryseo. *Rami* longi, gracillimi, vix filo emporetico crassiores, pallidi, glauci; tenelli pubescentes. *Folia* petiolata, alterna, patentia, interstitiis paullo longiora, ovato-cordata, cuspidulato-acuta, integerrima, nunc obsoleté crenulata, sinu baseos parvo, lobisque rotundatis, nunc (basi folii rotundatâ) fere obsoletis, bi- tripollicaria, membranacea, laevissima, valde glauca et opaca; paginâ superiore interdum variegatâ maculis amplis, albicantibus, inferiore tri- vel quinque-nerviâ, nervis gracilibus, in junioribus foliis puberulis, exterioribus brevissimis, parum reticulatâ, ad basin costæ, utrinque, glandulâ orbiculatâ, sessili, plano-convexâ, viridi, lucidâ, nunc geminatâ, quandoque pluribus

inter nervos vagis. *Petiolus* teres, gracilis, filiformis, suprá sulcatus medioque, vel paullo infrá, glandulis duabus, parvis, cylindricis, brevibus, alternantibus, approximatis. *Stipulæ* nullæ, nisi ciliæ axillares, subulatæ, minutæ, carnosæ, fasciculatæ, emarcescentes. *Cirrhi* axillares, solitarii, filiformes, spiraliter torti, indivisi, laeves, nudi, folio sesqui vel duplo longiores. *Pedunculi* axillares uniflori, nunc bi- vel triflori, filiformes, petiolo dimidio breviores, puberuli, *bracteolis* quibusdam sparsis, subulato-linearibus, emarcescentibus instructi. *Involucrum* nullum. *Flores* (fig. 1, 2.) inter minores, vix ultra pollicem transversum, emetientes, albi, externé diluté viridescentes, inodori. *Perianthium* decempartitum, patenti-recurvum, fundo convexo, parum prominulo; *lacinia* oblongo-lineares, obtusæ, membranaceo-marginulatæ; alternæ angustiores, petaloideæ. *Corona* triplex, concolor: *exterior* setaceo-multiradiata, patentissima, perianthii foliolis plus dimidio brevior; *media* huic proxima, haud vero contigua, plicato-multifida, inflexa, basi urceolata, lobis (fig. 3.) lineari-lanceolatis, versus columnam conniventibus, acutis, propter margines sursum revolutos supra canaliculatis; *intima* constans annulo obsoleto, angusto, integerrimo, puberulo, basin pedicelli ovarii purpurascentem cingente. *Columna* perianthio brevior. *Filamenta* subulata, recurvato-patentia. *Antheræ*, ovatæ, leviter deflexæ. *Ovarium* ovato-subglobosum. *Styli* devaricati, filamentis breviores. *Stigmata* clavata. *Bacca* (fig. 4.) sphaerica, nuda, laevis, flava, diametri linearum trium.

Observation.

This species comes near to *Passiflora pallida*, Linn., which Sir J. E. Smith has justly observed (Rees's Cyclopœdia, in loco) consists of two different species, namely one described by Plumier and the other by Piso. Loureiro's *P. pallida* (Flor. cochinch. 2. p. 527) is no doubt a distinct plant, as pointed out by Willdenow, in his edition of that work (2. p. 645.); it seems to differ from ours in having opposite, ovate leaves, and much larger flowers. These two last mentioned species appear, therefore, to be the only ones which have hitherto been found in India; unless *P. coerulea* be considered as a native of China, where Loureiro, in the above quoted work, says it grows wild; but this has been doubted by Sir J. E. Smith (loc. cit.) The present species is not without its elegance, although it is far behind most of the members of this beautiful genus. It is rather an uncommon plant in Nipal.

LILIUM GIGANTEUM, *Wall.* TAB. 12. 13.

Caule folioso, racemoso; foliis petiolatis, sparsis, cordatis, amplissimis; floribus infundibuliformi-campanulatis, intus glabris.

Sjiré, rectius *Sjirói* et *Osjiroi*. Kaempf. Amoen. Exot. p. 870. Ejusd. Icon. select. a Banksio edit., p. 3. t. 47.

Lilium candidum, Thunb. jap. p. 133?

Crescit in monte Sheopore, versus medium ejus, ad loca humida, umbrosa.

Floret sub pluviis, a mense Maii, usque ad finem Julii. Fructus maturitatem attingunt Octobre.

Bulbi ovato-globosi, aggregati, magnitudinis pomi mediocris, vetustuti maximi, constantes squamis pluribus crassis, carnosis, ovatis, truncatis, planiusculis, glabris, subpatulis. *Caulis* strictus, cylindricus, uti tota planta glaberrimus, cylindricus, sulco laterali alternatim interrupto saepius notatus, e basi, diametrum pollicarem ad bipollicarem emetiente, æqualiter attenuatus in apicem calamum scriptorium ad digitum minimum crassam, quatuor ad septem pedes altus, fructifer adhuc elatior, cavus et inanis, nec septis interstinctus, parietibus duas tresve lineas crassis. *Folia* magna, sparsa, plana, mem-

branacea, patula, petiolata, quædam remotiora, alia approximatiora, sæpe interstitiis plus duplo longiora, lato-ovata, cordata, attenuato-acuminata, sinu profundo subdecurrente, lobis latis, rotundatis, distantibus, leviter repanda et undulata, membranaceo-marginulata, nitida, supra saturatè viridia, subtus pallidiora, costâ amplâ, crassâ, albicante, nervis obliquis, distantibus, venis capillaceis, reticulatis, venula insuper indivisâ, submarginali; inferiora maxima, novempollicaria ad pedalia, longius petiolata, superiora sensim minora, minus profundè cordata, summa tripollicaria, brevissimè petiolata, gracilius et longius acuminata basique subrotundatâ, subintegrâ. *Petioli* crassi, sulco lato canaliculati, marginibus scindentibus, basi latissimâ tertiam caulis partem amplectente, infimi folia æquantes vel superantes, superiores iisdem his terve breviores, summi brevissimi, latissimi, pollicares vel infrà, marginati. *Flores* maximi, infundibuliformi-campanulati, obliquè nutantes, octo ad decem dispositi in racemum amplissimum, terminalem, nudum, pedalem vel sesquipedalem; albi, extus deorsum viridescentes, intus rufescentes, fragrantes; *tubus* viridescens, digitum medium fere crassus, tricostatus, obtusè triangularis, basi retusâ inæqualiter subtrilobus, sensim dilatatus in *limbum* æqualiter patulum, subrevolutum, quadri- ad quinquepollicarem. *Pedunculi* teretes, crassi, breves, semipollicares, recurvato-nutantes. *Flores* ante anthesin virides, deflexi, *bracteis* obtecti magnis, foliaceis, ovatis, albicantibus, caducissimis, insertionis vestiginm infra singulum pedunculum linquentibus angustum, semilunare, utrâque extremitate adscendens: præterea *bracteola* interna, alba, lineari-filiformis, adscendens, pollicem longa, supra basin singuli pedunculi inserta.—*Petala* (fig. 3.) oblongo-spathulata, inferiore dimidiâ parte valde crassâ, vix lineas quatuor latâ, exteriore dilatatâ in laminam lanceolatam, acutiusculam, minutim striatam, intus ad margines a punctis minutis densissimis rufescentem: basi subtus gibboso-convexa, supràque foveâ latiusculâ, nectiferâ leviter excavata, paginâ superiore sulco exaratâ longitudinali, extrorsum obliterato; marginibus nunc parum inæqualibus; *tria exteriora* parum latiora, dorso convexo costato; *interiora tria* costâ latâ, elevatâ, utrinque sulco exsculptâ profundo margines petalorum exteriorum recipiente. *Stamina* parallela, recta, conniventia, supra fauccm floris vix exserta, limbo parum breviora, longitudine parum inæqualia. *Filamenta* alba, carnosa, plana, petalorum basi inserta, sulcibus interiorum incumbentia, cumque illis canaliculam formantia nectariferam, apice teretia. *Antheræ* oblongæ, obtusæ, pallidè flavæ, rectæ, leviter versatiles. *Ovarium* (fig. 4.) oblongum, obtusè triangulare, loculis sex notatum, nitidum, sesquipollicare, triloculare, *ovulis* orbiculato-planis, fere absque numero placentæ, in singulo loculo bijugæ, duplici serie parallelâ insertis. *Stylus* crassus, rectus, filamentorum longitudine, infra stigma leviter inerassatus. *Stigma* prismatico-trilobum, obtusum, vertice triangulari, scabro, mucoso. *Capsula* (fig. 5.) ovato-prismatica, angulis obtusis, retusa cum cuspidulâ, lateribus concaviusculis, basi clavata, pollices duos et dimidium longa, duos lata, fusca, glabra, coriacea; *valvulæ* margine inerassatæ, introrsum pectinatæ serie simplici ciliarum longissimarum, angustissimarum. *Semina* (fig. 6.) innumera, levissima et tenuissima, triangularia, obliquè obovata, membrana latâ, tenuissimâ marginata, basi angustatâ et retusâ, semipollicaria. *Cætera* ut in Lilio bulbifero, Gaert. carp. 2. p. 16. t. 83.

Observation.

This majestic Lily grows sometimes to a size which is quite astonishing; a fruit-bearing specimen of the whole plant, which is destined for the Museum of the Hon. East India Company, measures full ten feet from the basis of the stem to its apex; its general height, however, when in full blossom, is five or six feet, and in that state it is a truly superb object. The flowers are proportionally large and delightfully fragrant, not unlike those of the common white Lily. The outer three petals are closely united to those within by their acute margins insinuating themselves under the dorsal rib of the latter, each

side of which is deeply furrowed. The filaments are inserted with their flat broad base just above the little cavity at the base of each petal and continue closely applied for about half their length to the furrow which proceeds from thence, forming a nectariferous canal, which leads to the above mentioned cavity. *Kaempfer's* figure is a tolerable representation of my plant before its flowers expand: but it is impossible for me to say, if it is actually intended for the same species. My ever-to-be-lamented benefactor and patron, the late Sir Joseph Banks, observes in the above quotation, that Thunberg refers this figure to *L. candidum*: but this last is a widely different species. I have ventured to quote Thunberg's plant, because the extraordinary length, which he ascribes to its flower seems to indicate, at least, that it cannot be the same as Linnæus's *L. candidum*. The root is at first very small, consisting almost of a solid mass; a number of leaves soon spring up from thence and it is the very thick and fleshy bases of these, which afterwards constitute the large bulbs. A number of these are often found surrounding the base of the stem, the whole forming a mass as large as an infant's head. Although I have repeatedly procured its roots I have never been able to succeed in making them shoot out any plant, or even survive one season in the Honorable Company's botanic garden.

HOLBOELLIA, *Wall.*

Flores monoici. *Perianthium* hexaphyllum; *foliolis* duplici serie, ordine ternario, alternatim dispositis. *Masculi*: *Stamina* sex parallela, distincta; *antheris* adnatis, extrorsis. *Glandulæ* sex ovatæ, filamentorum basibus oppositæ, iisdemque adnatæ. *Rudimenta* pistillorum centralia. *Fœminei*: *Ovaria* tria, distincta, oblonga, attenuata. *Styli* nulli. *Stigmata* simplicia, sulcata, evanida. *Stamina* sex sterilia, nana, completa, pistillorum bases ambientia. *Baccæ* sæpius tribus pauciores, divaricatæ, oblongæ, carnosæ, sessilis, corticatæ, follicularis, intus longitudinaliter dehiscentes, uniloculares, polyspermæ. *Semina* nidulantia, oblongo-ovata v. reniformia; *perispermo* copioso; *embryone* minuto, radiculâ *infera* vel *centrifuga*.

Classis Linneana: *Monoecia hexandria*.

Ordo naturalis: *Menispermeæ veræ*; ab hisce tamen nonnihil abludens directione radiculæ, *inferâ* vel centrifugâ. A generibus tribus, sectionem harum foliis compositis insignitam constituentibus, distinguitur sequentibus. A *Lardizabala* Ruiz et Pavon, floribus hexaphyllis, staminibus liberis, stigmatibus sulcatis, evanidis, baccis follicularibus, unilocularibus, pulpâ polyspermâ. A *Stauntonia*, De Candolle, differt staminibus haud coalitis nec aristatis; a *Bursaia*, du Petit Thouars absentiâ corollæ (perianthii nempe foliola in nostris plantis uniformia, petaloidea vel sepaloidea) filamentorum basibus distinctis, et fructus fabricâ haud drupaceâ nec monospermâ. Abludit præterea floribus monoicis, qui in illis dioici vel polygami. Habitus generalis *Lardizabalæ biternatæ* (in Itinere Perousii, tab. 6, 7, et 8 optimè delineatæ) magis adhuc, quoad folia, *Stauntoniæ* accedens.

Habitus: *Frutices* magnæ, extensè volubiles, gemmiferæ, glaberrimæ. *Folia* alterna, peltatim digitata, foliolis integerrimis, coriaceis, trinerviis, petiolis omnibus utraque extremitate intumescentibus et articulatis. *Racemi* fasciculati, subcorymbosi, nudi, laxi, axillares vel ad basin ramulorum, pauciflori. *Flores* albi, extus parum purpurescentes, fragrantes. *Baccæ* magnæ, tumidæ, purpureæ, abortione sæpius tribus pauciores, esculentæ. Genus consecratum amico et præceptori carissimo, Frederico Ludovico Holboel, Horti Botanici Regii Hafniensis hortulano dexterrimo, botanico peritissimo, operi Hornemanni *Flora Daniæ Oeconomica* nuncupato aliisque contributori, quique hortum Calcuttæ ditavit thesauris seminum frequentibus, amplissimis, omnium-que fertilissimis.

HOLBOELLIA LATIFOLIA, *Wall.* TAB. 16.

Foliolis ternis vel quinis, ovatis; floribus racemosis; baccis ovatis.

Parbatt. *Gooplea*: *Baegul.*

Frequens in sylvis montanis Napaliæ, Cheesapany, Chandaghira, Sheopore, coet. Florens Martio-Majo. Fruct. Octobre.

Frutex ampla, ramosa, valde volubilis, omnibus partibus glaberrima, surgens e radice liguosâ, ramosissimâ. Caulis cylindricus, valde tortuosus, frequenter diametrum pollicum trium ad quinque emetiens, *cortice* crasso, suberoso, molli, cinereo, vel flavicante, *ligno* cinerascente, radiato, paroso, levi. *Rami* longissimi, teretes, cinerei; juniores flagelliformes, glauci, subcirrhati. *Gemmæ* magnæ, ovatæ, *squamis* obtectæ coriaceis, latoovatis, cuspidato-acutis, diutius persistentibus et ramorum novellorum basin ambientibus. *Folia* patentia, petiolata, remotiuscula, peltatim digitata, ternata vel quinata, palmaria. *Petioli* graciles, teretes, suprá plani, basi apiceque articulati et oblongo-intumescentes, tri- quadripollicares; *partiales* illis simillimi, sed graciliores et breviores, pollicares ad bipollicares, intermedio longiore, dumque tribus plures laterales longitudine decrescentes, utrinque articulato-incrassati, verticillatim patentissimi. *Foliola* tria vel quinque, ovalia, acuta, rarius acuminata, nunc rotundato-acutiascula, basi rotundata: integerrima, leviter complicata, apicem versus parumper recurvata, firma et coriacea, laevissima, siccitate flavicantia, tri- ad quinquepollicaria, quin majora, suprá atro-viridia, lucida, ad vasorum tractus leviter sulcata, basi, ad utrumque latus insertionis petioluli, notati tuberculo minuto, oblongo, glanduliformi; subtus opaca, pallida, subglaucescentia, trinervia, costâ gracili elevatâ, nervis lateralibus in arcus anastomosantes, submarginales delitescentibus; præterea nervi e costa lateraliter progrediuntur subtransversales, breves, remotiusculi, alternantes; venæ reticulatæ capillares. *Stipulæ* nullæ. *Flores* subcampanulati, nutantes, albi, semipollicem longi, valde fragrantes, dispositi in racemos simplices, fasciculatos, subcorymbosos, laxos, axillares, vel circum basin novellorum ramorum subsparsos, petiolis breviores. *Aestivatio* valvata.—*Pedunculi* graciles, subcomplanati; *communis* pollicaris, bipollicarisve, basi sæpius squamis gemmaceis aliquot circumdatus; *partiales* filiformes, subclavati, pollicares, basi articulatâ suffulti bracteolâ lineari, membranaceâ, patulâ, mox deciduâ. *Masculi* (fig. 1, 2.)in distinctis racemis. *Foliola perianthii* parum carnosa, oblonga, exteriora obtusiuscula, interiora paullo angustiora, introrsum hamoso-acuta. *Stamina* (fig. 4, 5.) distincta, parallela, recta, contigua, æqualia, perianthio parum breviora, subclavata; *filamenta* subulata, carnosa, apice ab antherâ denudata, basi extus glandulâ carnosâ, sessili, planâ, ovatâ, aduatâ; *antheræ* lineares, albæ, loculis angustis, remotis, filamenti dimidiæ superiori parti longitudinaliter aduatis, extrorsum dehiscentibus. *Rudimenta* (fig. 3.) pistillorum tria, subulata, carnosa, intra stamina, hisce dimidio breviora. Flores *foeminei* (fig. 6, 7.) masculis parum breviores, foliolis paullo latioribus. *Pistilla* (fig. 8, 9, 10.) tria in centro floris, parallela, apicem versus leviter divergenti-recurvata. *Ovaria* oblongo-cylindrica, attenuata, foliolis perianthii interioribus opposita: intus obsoleté sulcata facileque juxta longitudinem in duas valvulas divisibilis, unilocularia, polyspora: ovulis parietibus undique, salvo sulculo isto, aduatis. *Styli* nulli, nisi apices ovariorum. *Stigmata* simplicia, parva, obliqua, obtusa, sulcata, evanida. *Stamina* (fig. 11.) sex sterilia, clavata, pistillorum bases circumposita, hisce multo breviora, erecta, filamentis crassis, brevissimis: antheris grandiusculis, polline vacuis. *Baccæ* (fig. 12, 13.) sæpissime duæ, nunc tres, divaricatæ, raro solitariæ, apici dilatatæ pedunculi lignosi, parum elongati, penduli insertæ, ovatooblongæ, utrinque obtusæ atque rotundatæ, pollices tres longæ, sesquipollicem crassæ, atropurpureæ, nitidæ, tumidæ et torosæ, superficie nempe inæquali et undulatâ, nunc parum seminosæ, latere interno inscriptæ suturâ longitudinali, undulatâ, crassiusculâ, juxtaque eam plenâ maturitate, a basi usque ad apicem dehiscentes in valvas duas æquales, follicularis, crassas: unilocularis, polyspermæ. *Cortex* carnosus, tres lineas crassus, intus obtec-

tus e tenuî tenui, e granis crustaceis vel subosseis conflatâ, a carne facilé separabili. *Caro* alba, mollissima, spongioso-reticulata, ab axi cylindricâ, solidâ, carnosâ, usque ad peripheriam divisa in cellulas concentricas, horizontales, alternas, seriebus sex ad octo sibi invicem impositas, approximatas, septis tenuissimis, pulposis separatas, monospermas. *Semina* (fig. 14, 15, 16, 17.) valde copiosa, numero cellularum correspondentia, horizontalia, centrifuga, oblonga vel rhomboidea, laevissima, atra, lucida, unguem longa, ad basin latiusculam, rotundatam inscripta *rimâ umbilicali* lineari: apice paullo angustiora, lateribus planiusculis, margine altero convexiore, altero angustiore. *Testa* coriacea, secus dorsum seminis paullo crassior. *Integumentum interius: pellicula* tenuis, fusca, albumini arcté applicata. *Albumen* amygdalino-carnosum, album, semini conforme, extremitate umbilicali, distantiâ minutâ ab ipsa peripheria, exsculptum cavitate exiguâ, mucilaginosâ, embryoniferâ. *Embryo* brevissimus, vix lineam longus, trochleari-oblongus, nivens. *Cotyledones* duæ, ovatæ, obtusæ, contiguæ. *Radicula*, cylindrica, dimidiam embryonis longitudinem efficiens, *infera*.

HOLBOELLIA ANGUSTIFOLIA, *Wall.* TAB. 17.

Foliolis senis nonisve, lineari-lanceolatis; *pedunculis* bi- trifloris, subfasciculatis; *baccis* oblongis.

Nomina vernacula, statio, tempus florendi, fructumque maturatio eadem ac præcedentis.

Habitus omnino prioris, sed statura gracilior et minor. Tota glabra. *Rami* perquam longi, viminei, valde tortuosi et volubiles, nunc radicantes. *Folia* longius petiolata quam in illa specie; *petioli communes* foliolis sæpe sesqui ad duplo longiores, suprá sulcati: novella rubicunda. *Foliola* septem ad novem, in formam ovato-orbiculatam, peltatam, verticillatim patentia, lineari-lanceolata, attenuata et subacuminata, cuspidata, basi rotundata, parumper repanda, integerrima, laevissima, lucida, coriacea, sed minus firma quam en altera specie, tripollicaria ad sexpollicaria; intermedium longius, petiolo partiali gracili, pollicari suffultum; lateralia utrinque decrescentia, brevinsque petiolata; duo baseos reliquis duplo breviora, petiolo brevissimo insidentia; circumscriptio generalis folii hinc subovalis evadit; superficies inferior glauca, reticulata, ad basin obsoleté trinervia, juxta tractum véro costæ elevatæ nervis brevibus, subtransversalibus, intra marginem arcuatim anastomosantibus instructa. *Pedunculi* axillares, lateralesque, subfasciculati, bi- triflori, teretes, laeves, petiolis bis terve, quin pluries breviores; fructigeri valde elongati, laxi. *Flores* (fig. 1—6.) albi, extus parum purpurascentes, suaveolentes, structurâ omnino priori æmuli; *pedicelli* ad basin bracteolâ lineari, patulâ, suffulti. *Baccæ* (fig. 7.) saepessimè duæ, oblongo-cylindricæ, pollicem crassæ, tres longæ, undulatæ, nitidæ, purpureæ, latere interiore dehiscentes. *Semina* (fig. 8, 9.) ovato- reniformia, minora quam in priori specie; *embryo* (fig. 10.) in altera perispermi extremitate locatus, centrifugus.

Observation.

These two shrubs are easily distinguished from each other. The first species is by far the strongest, growing sometimes to a gigantic size. I brought specimens down with me, for the Honourable East India Company's Museum, of a trunk, as thick as a good sized arm. Its leaves are broad, ovate, either ternate or quinate, about as long as the common petiol; the flowers quite white, collected in clusters: the berries large and ovate, the seeds oblong. The second species has long-petioled leaves; the leaflets from seven to nine, narrow- or linear-lanceolate, scarcely two-thirds of an inch broad; the peduncles few-flowered, and the flowers attaining soon after expansion a purplish colour:

the berries are not so thick, and of an oblong shape; the seeds reniform. The natives of Nipal eat the fruit of both plants, the pulp of which has a sweetish, but otherwise insipid taste.—Can Thunberg's two *Raianiæ, quinata* and *hexaphylla* (Flor. japon. p. 148 et 149) possibly belong to this genus?

ARUM NEPENTHOIDES, *Wall.* TAB. 18

Caulescens, erectum, laeve, dioicum, vaginis petiolisque variegatis; *foliis* binis, peltatim quinatis, *foliolis* lanceolatis, acuminatis; *spathâ* terminali, pedunculatâ, *limbo* trilobo: *lobis* lateralibus reniformibus, horizontalibus, intermedio acuto, fornicato; *clavâ* spadicis obtusissimâ, nudâ, vix exsertâ, basi truncato-retusâ; *staminibus pistillisqve sterilibus* nullis.

Legi in sylvis Sheopore montis, florens et fructigerum tempore pluvioso.

Tuber depresso-orbiculatum, carnosum, fuscum, undulatum, laeve, intus rufescens, vertice comosum radicibus longis, crassis, teretibus, pallidé rubris, parum fibrillosis. *Caulis* erectus, carnosus, teres, bi- usque ad quadri-pedalis, laevis, nitidus, basi pollicem ad duos crassus, *vaginis* aliquot indutus remotis, alternantibus, oblongis, arcté adpressis, obtusissimis, hinc fissis, infimis brevissimis; medio diphyllus, supernè gracilior, nudus, florifer, pennâ cygneâ vix crassior; totus variegatus maculis parum elevatis, scabriusculis, transversalibus et subannularibus, lateritiis, striisque hisce alternantibus, perpendicularibus, copiosis, parallelis, violaceis. *Folia* dua, subopposita, erecto-patentia, petiolata, peltatim-digitata, quinata, circumscriptione orbiculato-cordata. *Foliola* lanceolata, in acumen gracile attenuata, sessilia, deorsum angustata, basi subacuta, dorsalia ad spithamaea, inferiora duo hinc gibbosiora; membranacea, laevissima, suprá atroviridia, nitida, subtus glauca, costâ elevatâ, nervisque gracilibus, remotis, alternantibus. *Petiolus* teres, laevis, attenuatus, foliolis duplo longior, striis violaceis medio confluentibus annulatus, basi suâ, pennam cygneam crassâ, infra apicem vaginæ (fig. 2.) in ligulam, brevissimam, obtusissimam productæ insertâ. *Spatha* (fig. 1.) solitaria, terminalis, apice caulis spithamaeâ pedunculi in modum elevata, laevis, erecta, sex ad octo pollices longa, extus ex albo viridiuscula, pulcherrimé picta; intus emaculata, fuscescens; subenervia et subavenia; dimidia inferior pars convoluta in cylindrum pollicem crassum, ornatum striis brevibus, violaceis, numerosissimis, geminatis, longitudinaliter seriatis; *limbus* patens, trilobus: *lobi* laterales orbiculato-reniformes, horizontaliter patentissimi, obtusissimi, sesquipollicares, suprá convexi, fuscescentes, radiatim punctati, subtus concavi, albicantes, parallelé venulosi; *intermedius* triplo major, rectè adscendens, ovatus, fornicatus, apice leviter decurvus, subacuminatus, marginibus vix repandis, baseos parum contractæ lateribus recurvatis, sensimque in lobos istos laterales auriculæformes abeuntibus, dorso convexo, inscriptus lineis quinque albicantibus, latiusculis, parallelis, minimé elevatis. *Spadix* erecta, laevis, tubo spathæ parum longior, apiceque leviter supra faucem elevata, dioica; mascula fœmineâ parum gracilior, et una cum spatha brevior; pars dimidia inferior teres, e basi ultra medium densé staminifera vel pistillifera: coeterum nuda, absque genitalibus sterilibus, aliisve appendicibus, teres, gracilis, violaceo-punctata: pars dimidia superior, seu *clava*, cuneiformi-cylindrica, alba, punctulata, laevis, obtusissima, intus spongioso-fibrosa, medió contracta, basi iterum parum dilatata, subtruncata et retusa *Filamenta* valde numerosa, distincta, brevissima, subconica, seriebus quinque vel sex spiraliter ordinata, apice gerentia *antheras* tres vel quatuor verticillatas, nudas, globosas, uniloculares, vertice dehiscentes rimâ brevi transversâ; illæ staminum superiorum sunt majores, violaceæ, subreniformes: inferiorum vero minores, citius emarcescentes, flavicantes, globosæ: omnes tamen polliniferæ. *Bacca* (fig. 3, 4, 5, 6.) in distinctâ spadice, ovato-subrotunda, numerosissima, seriebus circiter duodecim densé imbricata, unilocularia, vertice purpurascentia, continentia *ovula*

quædam erecta. *Stylus* brevissimus, columnaris, purpureus. *Stigma* orbiculato-reniforme, subpeltatum, cinerascens, pubescens. *Bacca* (fig. 7, 8, 9, 10, et Tab. 20. fig. 6.) obovatæ, laeves, carnosæ, coccineæ, nitidæ, vertice leviter retusâ notatæ rudimento subulato, minuto, sphacelato styli, deorsum a pressura mutua parum angulares, uniloculares, di- ad tetraspermæ, epidermide tennissimâ obtectæ, lineas octo longæ, super axin spongiosam, foveolatam, crassam, densé imbricatæ in strobilum cylindrico-oblongum, obtusum, quinque ad sex pollices longum, duos fere crassum. *Caro* mollis, tenuis, pallida, excavata loculo amplo, laevi, æquali. *Semina* (fig. 11.) subglobosa, magnitudine grani piperis nigri, angulo uno alterove notata, dorso convexiora et subgibbosa, vertice mucrone exiguâ ab angulis confluentibus, basique hilo crassiusculo munita, erecta, laevia, nitida, cinerea, suffulta *funiculis* brevibus, carnosis, e fundo loculi ortis, uno altero demum parietalibus. *Integumentum* coriaceum, crassiusculum, intus anctum membranâ purpurascente, mucoso-carnosâ, tenuissimâ, versus hilum parum incrassatâ. *Perispermum* (fig. 12. et Tab. 20. fig. 7, 8.) crassum, sub-carneum, album, figurâ seminis; pars peripherica, semilineam crassa, fabricâ molliori, et colore e viridi cyaneo distincta: basi leviter retusum, vertice *poro* minuto, convexiusculo perforatum. *Embryo* cylindricus, rectus, vel leviter arcuatus, lacteus, totam axin perispermi, salvâ infimâ ejus parte, occupans; extremitas superior (radicalis?) paullo crassior, rotundata, porum istum perispermi omnino occupans, ita ut, a substantia ejus denudata, immediaté tegatur seminis integumento proprio *(epispermio)*; extremitas inferior, *(cotyledonea?)* hilo opposita, ab hocce parum remota, obtusiuscula. Interstitium inter duas extremitates parum contractum, supra medietatem lateraliter fissum rimâ (Tab. 20. fig. 10.) brevi, longitudinali, introrsum et sursum in *cavitatem gemmiferam* embryonis parvulam, centralem, perviâ. *Gemmula* (Tab. 20. fig. 11.) admodum minuta, conica, cavitate propriâ suâ inclusa, pendula, basi nempe latâ substantiæ ipsæ cotyledoneæ sursum accretâ, apice liberâ, directione obliquâ versus rimam externam descendente, centrifugâ.

Observation.

This species of Arum is very remarkable on account of the singular form of the inflorescence, and the beautiful manner, in which the whole plant, with the exception of the leaflets, is variegated. It is difficult to express in a description, the beautiful manner of this variegation; but the figure of the plant in Tab. 18, will give a pretty correct idea of it. In general it consists of annular, radiated bands, alternately purple and red, the latter somewhat elevated. The fanciful form and decoration of the spathe represent somewhat the appearance of one of the pitchers of *Nepenthes Rafflesiana* of my late, most deeply lamented friend William Jack, excellently described by him in the 3d Appendix to the 2d Vol. of Malayan Miscellanies, of which superb plant I brought innumerable specimens back with me from Singapore, which were subsequently forwarded (in February 1823) to the Museum at the India House, on the Hon. Company's ship General Hewett.—This resemblance has suggested the specific name. The female inflorescence is larger than the male; especially the spadix. The separation of the sexes in distinct plants, and the absence of barren stamens and pistils, as well as of all other appendages on the spadix, have afforded good characters for this and the two following species.—The difference in size and colour of the anthers attached to the upper and lower half of the staminiferous portion of the spadix, seems to be unconnected with any sterility; they are all polliniferous, and appear to be equally perfect. The singular structure of the embryo, discovered by Mr. Brown in the family of *Aroideæ*, and by the late Mr. Richard in the whole class of *Endorrhizæ (Monocotyledones)*, was first promulgated by the former in his Prodr. flor. nov. holland. 1. p. 334, and subsequently, by the latter, in his Analyse du fruit*; nor should

* For the English version of this admirable little Work I am indebted to the translator John Lindley, Esquire, from whom I received it, together with a copy of his valuable monography on Roses, while I was in Nipal, and to whom I take this opportunity of presenting my warmest thanks.

I ever have thought of looking for the minute fissure and gemmula, if they had not previously been pointed out by those immortal botanists. The gemmula is fixed with its broad basis to the vault of its cavity, just in the centre of the upper extremity of the embryo; its free apex points obliquely downwards and outwards, so as to protrude towards the fissure, which commences a little above the middle of the embryo and extends towards its upper extremity.—By an oversight the perfectly mature seed has been represented on the plate exhibiting another species, namely *Arum speciosum*, Tab. 20. fig. 6, 7, 8, 9, 10, and 11, instead of Tab. 18; a circumstance, which the reader is requested to bear in mind.

ARUM COSTATUM, *Wall.* TAB. 19.

Acaule, laeve, dioicum; *folio* solitario, ternato, *foliolis* semicordato-ovatis, valde acuminatis, undulatis, sessilibus, subtus nervis numerosis, parallelis, elevatis, approximatissimis, anastomosantibus; *scapo* petioli dimidium vix aequante; *spathâ* cylindraceo convolutâ, striatâ, intus carinatâ, fauce in appendiculatâ, limbo integro, ovato, fornicato, acumine tereti, brevi, filiformi; *clavâ* spadicis basi subtruncatâ, apice longissimâ, flagelliformi, descendente, spathâ fere triplo longiori.

Habitat et floret cum priore.

Tuber magnum, orbiculatum, parum depressum, carnosum, fuscescens, comosum *fibris* copiosis, teretibus, crassis, diluté rufescentibus, subnudis. *Folium* unicum, radicale, erectum, ternatum, amplum, uti omnes plantæ partes laeve, circumscriptione trilobo-cordatum, diametrum sesquipedalem emetiens, sinu baseos profundo, lobisque fere contiguis. *Petiolus* crassus, carnosus, pallidé virens, striatum lineis plurimis, parallelis, roseis, pallidis, bipedalis, basi unacum scapo, quem sulco satis profundo, subligulato amplectit, sesquipollicem crassus, vaginatus, superné nudus, hinc exsculptus sulco levi, marginibus obtuso, sursum attenuatus. *Vaginæ* duæ vel tres, membranaceæ, striatæ, ex albo rufescentes, alternæ; infima brevis, adpressa, acutinscula: reliquæ laxé amplexantes, lanceolatæ, attenuato-acuminatæ, erectæ, sursum liberæ et leviter convolutæ: summa et intima, longissima, scapum excedens. *Foliola* sessilia, purpureo-marginata, undulata, in acumen lineare, fere bipollicare desinentia, coriacea, pedalia, suprá atroviridia, lucida, subtus prædita costâ e basi crassissimâ extrorsum valde attenuatâ, nervisque innumeris, perquam approximatis, parallelis, obliquis, elevatis, parum ramosis et anastomosantibus, versus marginem arcuatis, venulâque gracili connexis; *intermedium* ovato-ellipticum, basi attenuatum, costâque robustâ quasi petiolatum; *lateralia* patentissima, illo parum angustiora, semi-cordata, latere interno baseos valde obliquo, subexsciso, externo producto in lobum magnum, rotundatum, quadripollicarem, lobo foliioli oppositi fere contiguum. *Scapus* petiolo dimidió brevior, basi sexpollicari ab hujus parte inferiore amplexus, erectus vel obliquus, nunc subrecurvus, teres, digitum minimum crassus, apicem incrassatum versus purpurascens. *Inflorescentia* terminalis, erecta, inodora, dioica, speciosa; mascula (fig. 1. minor, gracilior. *Spatha* atropurpurea, extus ornata striis albis, parallelis, latis, versus apicem limbi anastomosi duplici, ab invicem parum distanti, connexis, intus costata carinis totidem angustis, attenuatis: *tubus* cylindraceo-convolutus, tripollicaris; *faux* ampla, parum obliqua, nuda, margine leviter revoluta: *limbus* integer, ovatus, adscendens, fornicatus, apice nutans, acuta, terminata processu, vel acumine filiformi, tereti, descendente, pollicari, concolore: in mascula limbus, una cum processu isto obliqué adscendit. *Spadix* gracilis, basi inclusa, bipollicaris, teres purpurea, et maximâ parte obtecta organis fructificationis, superné nuda et absque organis sterilibus appendiculosve. *Clava* gracilis, teres, atropurpurea, basi cuneata, propter rugos longitudinales sublobata, infra fornicem leviter ventricosa, mox vero abiens in flagellum gracillimum, longissimum, undulatum, exsertum, obliqué descendens, concolor, processum spathæ

longe excedens, pedale et ultra ; in spadice *masculâ* (fig. 2.) basi vix incrassata, flagello quadripollicari. *Mascula : filamenta* sparsa, distantia, teretia, brevia, carnosa, terminata verticillo *antherarum* quinque vel sex reniformium, lutearum.— *Foeminea* (fig. 4) : *ovaria* (fig. 5, 6, 7.) densissimé imbricata, laevia, ovata, oligospora ; *stigmata* subsessilia, subtruncata.

Observation.

This handsome species is readily distinguished by its leaves, which are strongly marked with innumerable parallel, closely approximated nerves, proceeding in an oblique direction from the strong middle rib towards the margin, and here and there united by means of a few short ramifications. The spathe is beautifully striped on both sides and keeled within : the stripes unite under the apex of the limb by a double line.

ARUM SPECIOSUM, *Wall.* TAB. 20.

Acaule, laeve, dioicum ; *radice* repente ; folio solitario, ternato, *foliolis* ovato-cordatis, repandis, acuminatis, petiolatis, distanter nervosis, *petiolo* variegato ; *scapo* brevissimo ; *spatha* striatâ, ecostatâ, basi cylindraceo-convolutâ, fauce nudâ, *limbo* lato-ovato, integro, fornicato, in acumen lineare, longum attenuato ; *clavâ* cuneatâ, apice filiformi, spathâ dimidió longiore.

Habitat in monte Sheopore. Florens sub pluviis.

Radix crassa, carnosa, repens, quatuor ad sex pollices longa, diametro bipollicari, squamis multis lanceolatis, membranaceis, aridis, ferrugineis obtecta, e latere inferiore demittens *fibras* longas, teretes, albicantes, ramulosas. ***Folium*** unicum; radicale, erectum, uti omnes partes laeve, circumscriptione trilobo-cordatum, lobis distantibus, pedale. ***Petiolus*** crassus, teres, carnosus, bipedalis, zonis plurimis, parallelis, radiatis, purpureis annulatus, basi tubulosâ scapum fere totum involvente, ostio obliquo, nudo. ***Vaginæ*** duæ, unilaterales, dimidiatæ, membranaceæ, fuscæ, striatulæ, lanceolatæ : inferior brevis, superior attenuato-acuminata, petioli dorso adpressa, scapum longitudine parum excedens. —***Foliola*** ovato-cordata, decem-pollicaria, ad pedalia, acuminata, purpureo-marginata, repanda, vix undulata, coriacea, petiolis partialibus suffulta pollicaribus, crassis, sulcatis, submarginatis ; paginâ superiore lucidâ, inferiore pallidâ, costâ mediocri, nervis remotis, gracilibus, parallelis, versus marginem arcuatim anastomosantibus ; tenuissimé et reticulatim venosa ; lateralia vix minora, semicordata, lobis rotundatis. ***Scapus*** teres, erectus, albus, petiolo quater brevior, ejusque basi vaginatus ; apice tripollicari exsertus, purpurascens, supernè vix dilatatus. ***Inflorescentia*** leviter nutans, dioica, inodora, speciocissima, purpurea, basi intus albicans, absque costis vel carinis, striis ornata usque ad apicem fere parallelé decurrentibus ; ***mascula*** vix minor. ***Tubus spathæ*** convolutus, cylindricus, quatuor pollices longus, diametro sesquipollicari, intus albicans, extus striis rufescentibus notatus ; ***faux*** pervia, nuda ; ***limbus*** maximus, integer, adscendens, ovatus, subfornicatus, pedalis, palmam latus, basi intus pallidus, supernè striatus, venulosus, apice nutante attenuatus in acumen gracillimum, lineare, tripollicare, versus tubum incurvum, atropurpureum. Tota ***spadicis*** (fig. 1.) basis obtecta organis fructificationis, absque appendicibus ; ***clava*** digitum fere crassa, cuneata, semi-inclusa, flava, attenuata in flagellum descendens, teres, gracile, decempollicare, purpureum, undulatum, limbo spathæ dimidió circiter longius. ***Mascula : filamenta*** longiuscula, teretia, sparsa, approximata ; antheræ praecedentis speciei.—***Foeminea*** (fig. 1, 2, 3, 4.) prioris.

Observation.

A very superb plant belonging to the less frequent productions of Nipal. Like both the preceding species it inhabits dark and shady parts of the high mountain of Sheopore, and has hitherto resisted my endeavours to make it survive a hot season in Bengal. Fig. 6, 7, 8 and 9 belong to *Arum nepenthoides*.

CINCHONA GRATISSIMA, *Wall.* TAB. 21.

Foliis ovato-oblongis, acuminatis subtus ad nervos villosis; *paniculâ* terminali, multiflorâ; *calyce* villoso, *laciniis* longis, lincaribus, deciduis; *corollâ* glabrâ, *tubo* longiusculo cylindraceo *lobis* subrotundis, concavis. *Wall.* in Roxb. flor. ind. 2. p. 154.

Crescit copiosé in rupibus subnudis Nag-Urjoon, aliisque montibus minoribus Napaliæ; etiam ad Bechiako et Koolakim, florens toto fere anno. Etiam habui e montibus *Tundooa*, Sylhet vicinis, ubi floret Septembre.

Nomen Newarrense et Parbutteum *Toongnusi*. Bengalense *Usookooli*.

Arbuscula ramosa, sedecimpedalis, *trunco* æquali, diametrum sexpollicarem attingente, obtecto *cortice* tenui, fusco, scabro. *Lignum* compactum, pallidum, albidum. *Ramuli* oppositi, cinerei, calloso-punctati; juniores rufescentes, puberuli. *Folia* opposita, patentia, approximata, acuminata, ovato-oblonga, basi acuta, marginibus subundulata, ciliata, coriacea, quadri- ad sexpollicaria, glaberrima, suprá lucida, subtus pallida et opaca, costâ elevatâ, nervisque villosis, obliquis, parallelis, approximatis, ad axillas acervulo pilorum munitis. *Petioli* teretes, pubescentes, pollicares vel sesquipollicares nunc rufescentes. *Stipulæ* lanceolatæ, canaliculato-acuminatæ, lineas quinque longæ, glabræ, valde deciduæ. *Panicula* terminalis, sessilis, ovato-rotunda, folia superiora longitudine subæquans; *rami* decussati, incano et densé villosi. *Bracteæ* infra divisuras adque basin pedicellorum oppositæ, lineares longæ, caducæ. *Flores* (fig. 1, 2.) magni, speciosi, rosei, ternati, fragrantes. *Calyx* villosus, *pedicello* brevi, subcarnoso insidens, divisus in *lacinias* (fig. 3.) quinque lineares, erectas, acutas, subinæquales, nunc inæquilateras, coloratas, basi leviter angustatas et subarticulatas, caducas, villosas, intus glabras sex- ad duodecim lineas longas. *Corolla* (fig. 4.) glabra, calyce duplo longior, subcarnosa; *tubus* cylindricus, gracilis, sursum parum ampliatus; *faux* pervia, nuda; *limbus* patens, tubo dimidió brevior, *laciniis* subrotundis, concavis, obtusis, crenulatis, basi subcordato retusis. *Filamenta* brevissima infra faucem; *antheræ* lanceolatæ, vix exsertæ. *Ovarium* (fig. 5, 6.) oblongo-cuneatum, carnosum villosum, biloculare; *ovula* super *placentam* septalem, carnosam densé imbricata; *stylus* filiformis; *stigma* clavatum, carnosum, divisum in lobos duos lanceolatos, margine revolutos. *Capsula* (fig. 7 8.) oblongo-clavata, parum villosa fusca, lineas octo longa, leviter compressa, apice truncatâ notata vestigio insertionis calycis, bilocularis, inscripta sulcis oppositis duobus, juxtaque hos usque ad basin acutam dehiscens in locula duo; *membrana exterior* carnosa, demum coriacea; *interior* chartacea. *Dissepimentum* parallelum, planum, constans membranâ internâ utrinsque loculorum inflexâ, maturitate ab apice usque ad basin in duas partes divisum, apice ostio rotundato excisum. *Placenta* lineari-oblonga, foveolata, demum libera; *locula* (fig. 9, 10.) fissurâ internâ ab ostio dissepimenti ad basin usque longitudinaliter dehiscentia, ideoque quasi bivalvia. *Semina* (fig. 11, 12.) copiosa, minuta, cuneata, adscendentia, densé imbricata, ferruginea, rugosa et scabra, apicem obtusam verus membranulâ venosá, angustâ, crenulatâ, inæquali cincta.

Observation.

It is impossible to conceive any thing more beautiful than this tree, when covered with its numerous round panicles of pink-coloured, very fragrant and large blossoms. I have

been told that it grows sometimes to a much greater size than that mentioned above, which is the one I have observed it to attain. The ovary and half ripe capsule show a peculiar structure; they appear four-celled, when divided horizontally, in consequence of the inner tough membrane continuing, after it has formed the dissepiment, to turn further inwards, penetrating almost through the fleshly placenta to the opposite or external side of the cell, which latter, in consequence, appears to be subdivided into two compartments. —*Wall. loc. cit.*

HYMENODICTYON, *Wall. loc. cit. p.* 148.

Calyx adnatus, quinquedentatus. ***Corolla*** infundibuliformis, limbo quinquefido. ***Filamenta*** brevissima, glabra infra faucem adfixa; ***antheræ*** exsertæ, limbo breviores. ***Capsula*** nuda, biocularis, bivalvis, dissepimento ventrali contrario, demum bipartito. ***Semina*** plana, cincta membranâ reticulata (unde nomen), imbricata super placentam, septi commissuræ adnatam, demum liberam.

Classis Linnæana: ***Pentandria monogynia***, sectio floribus monopetalis superis, capsulaque biloculari, bivalvi.

Ordo naturalis: ***Rubiacearum*** subdivisio secunda, sectio tertia (Jussieu in Memoires du museum d'histoire naturelle, 6. p. 365 et sequ.)

Habitus Arbores excelsæ, umbrosæ, ramulis compressis, foliis oppositis, coriaceis, stipulis glanduloso-ciliatis. ***Flores*** inconspicui, pubescentes, virides densi, fasciculati, in paniculam digesti terminalem, vel in racemos cylindricos, pedunculatos, axillares terminalesve, simplices vel parcé ramosos. Pedunculus communis apice gerens ***bracteam*** aridam venosam lanceolatam, longe pedunculatam convexam. Affinitatas præcipua ***Macrocnemo***, ***Mussaendæ***, ***Cinchonæ*** atque ***Exostemmati***. Differt a primo horum generum staminibus glabris seminibusque alatis; a secundo fructus structurâ et consistentiâ; utroque vero approximatur folio bracteave illa singulari florali, in eo tamen abludente, quod ex apice pedunculi communis, nec ut in illis è basi ipsius calycis, prodeat. A posterioribus duobus generibus distinguitur capsula nuda haud bipartibili, dissepimentoque contrario, juxta axin in duas partes æquales disrumpente, valvulis adnatas. Semina insuper majora et eorum ala basi bifida; figura tandem corollæ magis ***Cinchonæ***, antheris exsertis ***Exostemmati*** cognatum. *Wall. l. cit.*

HYMENODICTYON FLACCIDUM, *Wall. l. cit. p.* 152. TAB. 22.

Foliis elliptico-ovatis, suprá glabris, nitidis; stipulis oblongis, spathulatis; racemis axillaribus, gracilibus, laxis; capsulis oblongis.

Observavi ad descensum septentrionalem montis Sheopore, versus basin, in sylvis densissimis, floribus capsulisque præcedentis anni vacuis onustum mense Junio. Etiam habui e Noakote, eadem mense florentem.

Arbor mediocris, umbrosa, cortice cinereo, glabrinsculo. ***Rami*** patuli; superiores bi- vel trichotomi, glabri; tenelli leviter compressi, basi circumdati squamulis aliquot gemmaceis, ovatis, concavis, brunneis. ***Folia*** valde copiosa, versus apices ramorum approximata, patentia, ovato-elliptica, acuminata, basi attenuato-acuta, coriacea, sex- ad decempollicaria, parum undulata, glabra, nitida, juxta nervos leviter sulcata, subtus pallida, opaca, costâ nervisque obliquis, elevatis, parallelis, pubescentibus, ad axillas faveolatis puberulisque; reticulato-venulosa. ***Petiolus*** teres, crassus, glaber vel puberulus, pollicaris, apice una cum basi costæ rufescente. ***Stipulæ*** oblongæ, spathulatæ, obtusæ, glabræ, membranaceæ, subpetiolares, unguiculares ad pollicares, emarcescentes, deciduæ, basi parum contractæ, capillaceo-venulosæ, denticulis sphacelatis ciliatæ, intra basin et in axillis petiolorum

glandulis subulatis, minutis, atris, serie simplici dispositis. ***Racemi*** flaccidi, penduli, axillares, solitarii, foliorum circiter longitudine, graciles, cylindrici, densé obsiti ***floribus*** (fig. 1.) approximatis, fasciculatis, ternatis vel quinatis, viridibus, pubescentibus, inodoris. ***Pedunculus communis*** pubescens, bipollicaris, apice instructus ***bracteâ*** vel ***foliolo florali*** patentissimo, lanceolato-oblongo, membranaceo, acuto, integerrimo, pallidè viridi, vel subalbicante, pubescenti, rugosulo, nervoso-venoso et reticulato, tripollicari, suprà convexo, subtus concavo, ***petiolo*** glabro, tertiâ parte breviore. ***Pèdicelli*** brevissimi; singuli bracteolâ minutâ, lineari. ***Calycis laciniæ*** (fig. 2.) brevissimæ, lineares. ***Corollæ tubus*** (fig. 3.) calycis laciniis duplo longior, gracilis, villosa; ***limbus*** subplicatus, campanulatus: ***laciniis*** lanceolatis, acutis, basi membranulâ tenuissimâ unitis. ***Stamina*** infra faucem inserta, glabra: ***filamenta*** admodum brevia; ***antheræ*** lineares, erectæ, exsertæ, limbo paullo breviores. ***Ovarium*** (fig. 4, 5.) ovatum, pubescens, biloculare; ***orula*** numerosissima, lanceolata, plana, marginata, super placentam carnosam, septalem densé imbricata; ***stylus*** capillaceus, glaber, corollâ bis longior: ***stigma*** clavatum, obtusum, glabrum. ***Capsula*** (fig. 6, 7.) oblongo-ovata, fuscescens, decem lineas longa, glabra, calloso-punctata, bilocularis, bivalvis, juxta ventrem valvarum septifera; *semina* haud vidi.

Observation.

This species comes near to my ***Hymenopogon thyrsiflorum*** (***Cinchona***, Roxb.) which differs, however, in having broader, ovate, subcordate, downy leaves, and much thicker, both terminal and axillary, subcompound racemes; its capsules, too, are broader and almost oval.—*Wall. l. cit.*

SARCOPYRAMIS, *Wall.*

Calyx inversé poramidalis, ore truncato, quadridentato, dentibus compressis, ciliatis, persistentibus, interstitiis nudis. ***Corolla*** tetrapatala. ***Stamina*** octo; ***antheræ*** simplices, rectæ, nudæ. ***Ovarium*** semiadnatum, vertice infundibuliformi-quadrilobum. ***Capsula*** quadrata, calyce basi cincta, apice quadrialata; quadrilocularis, quadrivalvis, polysperma; valvulæ foliaceo-dilatatæ.

Classis Linneana: ***Octandria monogynia.***

Ordo naturalis: ***Melastomaceæ***, R. Brown; generibus ***Rhexiæ*** et ***Osbeckiæ*** intermedium. ***Stomandræ***, beat. Guil. Jack, (Act. Soc, Linn. 14. p. 10.) affine.

Planta annua, carnosa, subsimplex, ramis paucis instructa. ***Folia*** opposita, serrulata, pilosula. ***Floræ*** terminales, umbellati, majusculi, rosei.—Nomen sumpsi e consistentia et figura ovarii.

SARCOPYRAMIS NAPALENSIS, *Wall.* TAB. 23.

Legi in monibus vallis Napaliæ majoris Sheopore, Chandaghiry, aliisque ad loca umbrosa, humida, saxosa. Floret Julio—Septembre. Fructus maturescunt Octobre et Novembre.

Planta subsimplex, herbacea, erecta, laeté viridis, nunc rubicunda, carnosa, subdiaphana, glabriuscula, sex- ad duodecim pollices alta. ***Radix*** gracilis, fibrosa; interdum elongata, subrepens. ***Caulis*** laevis, acuté tetragonus, basi pennam anserinam crassus, sursum attenuatus, angulis scindentibus, per pares approximatis, lateribus duo oppositis itaque latioribus. ***Rami*** pauci, nunc alterni versus apicem caulis, erectiusculi, breves; nunc sub-

nulli. *Folia* opposita, subdecussantia, petiolata, interstitiis duplo longiora, bi- ad quadripollicaria, suprema nunc valde approximata; magnitudine inequalia, altero nempe ejusdem paris tertió vel dimidió breviore; fere membranacea, ovata, acuminata, basi inæquali acuta, extrorsum crenato-serrulata, serraturis acutis, setulâ terminatis, suprá atroviridia, lucida, setis hyalinis, brevibus, rectis conspersa, trisuleata; subtus pallidiora, sæpeque purpurascentia, quinquenervia, nervis extimis gracillimis, submarginalibus; transversim venulosa, juxta tractus vasorum pilosula. *Petioli* carnosi, graciles, sulco angusto exarati, æquales, folio dimidió vel triplo breviores, laeves. *Stipulæ* nullæ, nisi series transversalis ciliarum subulatarum, succulentarum, caulem inter petiolorum insertiones ambientium. *Flores* fig. 2, 3. idem dissectus fig. 4.) tres ad quinque, terminales, umbellati, ratione magnitudinis plantæ sat magni, rosei, inodori, glabri, suffulti pari uno vel duobus foliolorum floralium lanceolatorum, subsessilium, semipollicarium. *Præfloratio* (fig. 1.) conica, imbricata. *Pedunculi* carnosi, brevissimi, laeves, rufescentes. *Calyx* (fig. 3. idem staminibus inflexis fig. 7. idem ovario fœcundato fig 9.) carnosus, laevis, obovatus, acuté tetragonus, persistens, ad latera convexiusculus, ore truncato, quadrato, juxta margines scindentes, nudos leviter exsciso; angulis in dentes totidem desinentibus porrectos, compressos, verticales, patentes, apice obliqué truncatos, ciliatos setis simplicibus, hyalinis, utrinque patenssimis, duplici serie dispositis, juxta angulos ipsius calycis quandoque decurrentibus. *Petala* (fig. 4.) quatuor, ovata, carnosa, cuspidato-acuta, integerrima, patentissima, rosea, laevia, nitida, lineas quatuor emetientia, calyce duplo longiora, basi latiusculâ infra ostium calycis inserta, dentibus alternantia. *Stamina* (fig. 5, 6.) octo, petalis parum breviora, erecta, parallela, æqualia, serie simplici annulari equidistanter calyci inserta, dentibus calycinis petalisque alternatim opposita. *Filamenta* alba, filiformia, carnosa. *Antheræ* couformes, simplices, erectæ, flavæ, oblongo-cuneatæ, nudæ et absque ullis appendicibus, basi acutiusculæ, apice leviter dilatatâ, subbilobâ poris duobus, obliqué hiantibus dehiscentes, æstivatione una cum apicibus filamentorum recté deflexæ. *Ovarium* (fig. 4, 5.) ovatum, carnosum, dimidiâ inferiore parte fundo calycis areté accretum, superiore tetragono-pyramidatum, lateribus convexum, liberum, juxta margines ope membranulæ angustissimæ, brevissimæ, demum evanidæ, angulis internis summi calycis adhæreus, unde cellulæ parietales quatuor formantur, antheras, clauso adhuc flore deflexas, per pares recipientes; apice contractum, truncatum, quadrilobum, lobis carnosis, brevissimis, latiusculis, obtusissimis, ciliatis minutimque crenatis, in hiatum infundibuliformem, quadrangularem connivent-bus, post fecundationem ampliatis; quadriloculare; *locula* rotunda, angulis exterioribus opposita, *ovulis* repleta sub-cylindricis, placentæ axili, convexæ, sessili, carnosæ adfixis. *Stylus* brevis, rectus, cylindricus, laevis, deciduus, vertice quadrilobâ ovarii basi inclusus, perque axin inde decurrens. *Stigma* parvum, convexum, puberulum. *Capsula* magnitudinis pisi communis, laevis, quadrata, exceptâ ipsâ basi latâ libera, inferiore demidiâ parte obtecta calyce paullo ampliato, desiccato, membranaceo, angulis quatuor sursum valde prominentibus et porrectis notato, vertice coronata alis quatuor terminalibus, rotundato-ovatis, obtusis, levissimé crenulatis, venulosis erectis, margine contignis; quadriloculuris, vertice quadrivalvis: valvæ triangulares, dissepimentis oppositæ, alis istis seorsim terminatæ. *Dissepimenta* angusta, tenuissima. *Semina* crebra, parva, fusca, cuneato-triangularia, basi acutâ glabriora, verticem obtusam versus punctis minutis, elevatis pa-pillosa, receptaculis axilibus inserta.

Observation.

I cannot refer the plant, which has just been described, to any of the established genera of *Melastomaceæ*, although I have every reason to suppose, from having communicated specimens to my inestimable friend Mr. A. B. Lambert, that it must be included among the descriptions of the new genera of that most difficult and extensive

tribe, which were presented, two years ago, to the Wernerean Society of Edinburgh by the curator of his herbarium, that indefatigable and excellent botanist Mr. David Don. In general appearance it resembles an *Exacum;* but its flowers and fruit are those of a widely different family, and decidedly mark it as a member of the one, under which I have placed it. The structure of some parts of the flower and of the fruit is very peculiar and not easily explained. I will attempt to exhibit it in a clearer light, perhaps, than I have done above. The calyx forms a fleshy, inversed pyramid, with somewhat convex sides, and sharp, rather prominent and almost straight angles; its mouth is four-sided, open, with slightly concave, naked margins, and protruding corners, which form four vertically compressed, fleshy teeth, acutely truncated and flattish at the apex, and there ciliated by two rows (one along each margin) of short, pellucid, subulate, most spreading bristles, which sometimes continue from the point, whence the two rows diverge, a little way downwards on the sharp back of the teeth, towards the angles of the body of the calyx which, in every other respect, is perfectly free from hairiness. The ovary is considerably shorter than the calyx, to the bottom of which its lower half is uniformly attached; the remainder has a pyramidal figure, with convex sides, and curved, obtuse margins, which are connected with the internal angles of the calyx, by means of four very narrow, short, and thin membranes, whereby four lateral broadish cells are formed, corresponding to the sides of the calyx and the ovarium, in which the anthers are hidden by pairs, in their nodding state, during the æstivation of the flower. Its vertex is suddenly contracted into a short, quadrangular, truncated cone, consisting of four very short, fleshy, rounded, slightly uneven and ciliated lobes, which are parallel to its sides, having their margins closely applied to each other, and leaving an inversely pyramidal opening between them, into which the base of the style descends before it enters the axis of the ovary. In proportion as this latter increases in size, it rises above the month of the calyx, the above mentioned connecting membranes disappear, and its rounded angles become prominent: in this state a double pyramid is represented, the lower apex of which is supported by the pedunele, and the middle (or the opposed bases) is surrounded by the very narrow mouth of the calyx and its protruding angles; the upper, contracted and truncated apex is perforated. The capsule is dry, four-sided, smooth, marked round the middle by the withered teeth of the calyx, and crowned with the four lobes of the ovary, which have now become as many membranous, rounded, small wings; bursting at the vertex into four short valves, each having a dissepiment along the middle of the base and terminating into a wing. The situation of the cells is contrary to the direction of the wings; the seeds are very minute and numerous.

MYRSINE SEMISERRATA, *Wall in Roxb. flor. ind.* 2. *p.* 294. TAB. 21.

Arborea, erecta; *foliis* extrorsum acuté serrulatis, basi integerrimis; *floribus* fasciculatis, pedunculatis *stylo* brevi; *stigmate* dimidiato, laciniato-fimbriato.

Nomen Parbutteum et Newarrense: ***Bilsee*** et ***Beresee;*** etiam ***Kalikath.***

Communis in omnibus fere quas visitavi Napaliæ sylvis, usque ad apices montium Chandaghiry et Sheopore, florens et fructifera tempore frigido, a Decembre ad Martium. Etiam habui e Kumaon et Sirinagur.

Arbor ramosa, triginta ad quadraginta pedes alta, *trunco* diametrum semipedalem attingente, vestito *cortice* glabro, pallido. ***Rami*** cinerei, terestes, calloso-punctati; *ramuli* laeves, angulosi. ***Gemmæ*** terminales, graciles, conicæ, punctis copiosis, resinosis, rufescentibus conspersæ; *squamæ* lanceolatæ. ***Folia*** sparsa, approximata, patentia, lanceolata, nunc lineari-lanceolata, acuminata, utrinque attenuata, coriacea, firma, tri- ad quinquepollicaria, extrorsum, raro e basi usque ad apicem, nunc uno modó latere cus-

pidato-serrulata: in luxuriantibus ramis quandoque rufescentia, integerrima; laevia, lucida, conspersa punctis copiosis, resinosis, pellucidis, rufis, juxta marginem leviter revolutum lineolam huic approximatam dispositis; costâ subtus parum elevata, nervis capillaceis, obliquis, intra marginem arcuatim et reticulatim anastomosantibus. ***Petiolus*** brevis, vix ultra duas lineas emetiens, punctatus, suprá plamusculus. ***Stipulæ*** nullæ. ***Flores*** (fig. 5.) parvi, inodori, tetrandri vel pentandri, omnes hermaphroditi vel masculis interspersi, sex ad duodecim conferti in fasciculos axillares, numerosos, rotundatos, basi amplexos *bracteolis* ovatis, deciduis, fuscis. ***Pedunculi*** semipollicares, graciles, filiformes, obsoletè angulati, subclavati, centrales fasciculorum interdum abortivi vel nulli. ***Calyx*** persistens, punctis notatus copiosis, elevatis, resinosis; *dentes* quinque, lanceolati, acuti, patentes, ciliati. ***Corolla*** (fig. 7.) rotata, erubescens, punctata, calyce duplò longior; *laciniæ* lanceolatæ, recurvæ, dentibus calycinis alternantes; *tubus* brevissimus. ***Filamenta*** brevissima, laciniis opposita, earumque basi inserta; *antheræ* magnæ, ovatæ, erectæ, aurantiacæ, utrinque longitudinaliter dehiscentes. ***Pistillum*** (fig. 6, 8.) punctatum, stamina parum longitudine excedens. ***Ovarium*** (fig. 9, 10.) ovatum, uniloculare, tri- tetrasporum; *ovula* placentæ erectæ, carnosæ, globosæ lineâ circulari semiimersæ; *stylus* brevis, columnaris; *stigma* carnosum, subinfundibuliforme, limbo amplo, unilaterali, trilobo, laciniato-fimbriato. *Flores masculi* (fig. 1, 2, 3, 4.) minores quam hermaphroditi, antheris violaceis, cum rudimento centrali pistilli. ***Drupa*** globularis, leviter depressa, apiculata, monosperma, rubra, magnitudinis pisi minoris, calyce immutato suffulta, laevis, nitida. ***Caro*** mollis, pulposa. ***Semen*** erectum, globosum. ***Putamen*** crustaceum, glabrum. ***Integumentum*** membranaceum. ***Perispermum*** cartilagineum, semini conforme, albicans, foveolatum et superficialiter ruminatum. ***Embryo*** longus, cylindricus, horizontalis, leviter curvus, diametrum perispermi æquans, totumque fere excurrens. ***Cotyledones*** semicylindrici, obtusi, intus plani; *radicula* obtusa.

Observation.

"The wood of this species is of a chocolate colour, radiated, compact and heavy; it is much esteemed by the hill people for various carpenters works. They eat the fruit." *Wall. loc. cit.*

MYRSINE CAPITELLATA, *Wall. l. cit.* 295. TAB. 25.

Arborea, erecta; foliis oblongo-lanceolatis, integerrimis, coriaceis; floribus subsessilibus, axillaribus, capitellatis; stylo elongato, crasso; stigmate integro, glabro, obtuso.

Nomen Parbutteum; *Syade.*

Newarrense; *Bkoe Billoo.*

Valde communis in Napaliæ sylvis, florens et fructifera hyeme.

Arbor priori habitu et magnitudine similis. ***Ramuli*** crassi, angulati. ***Folia*** approximata, sparsa, patentia, coriacea, firma, oblongo-lanceolata vel subovata, integerrima, acuminata, basi acuta, quinque- ad septem-pollicaria, juxta marginem copiosé punctulata, superné lucida, inferné pallida parumque glaucescentia, costâ elevatâ, nervis obsoletis capillaribus. ***Petiolus*** crassus, brevissimus, sulcatus, nunc rufescens. ***Flores*** (fig. 1, 2, 3.) polygami, sessiles, viridiusculi, punctis conspersi copiosis, minutis, elevatis, resinosis, fuscis, aggregati in capitula parva, rotundata, axillaria, vel lateralia ad vestigia foliorum delapsorum, subsessilia vel suffulta *pedicello* communi subligneso, brevissimo, columnari, e *bracteolis* minutis, ovatis, concavis, persistentibus scabriusculo. ***Æstivatio*** valvata. ***Calyx*** (fig. 4.) urceolatus, dentibus quinque ovatis, acutis. ***Corolla*** (fig. 5.) calyce bis longior; *tubo* brevi; *laciniis* recurvatis, lanceolatis. ***Filamenta*** brevissima, subulata;

anthera oblongæ, erectæ. *Ovarium* (fig. 6, 7.) globulare. ***Stylus*** carnosus, crassus, corollâ bis longior, medio intumescens, apicem versus parum curvus, basi vertici ovarii depressæ parum immersâ; *stigma* obtusum, obscuré, bilobum. *Flores masculi*, foemineis parum majores. *Fructus* (fig. 8.) quadammodo minor quam prioris speciei; coeterum omnino similis.

Observation.

"The wood of this tree is hard and durable like that of ***Myrsine capitellata*** and is used for similar purposes. The fruit is also eaten." *Wall. loc. cit.*

CRYPTOCHILUS, *Wall.*

Flores resupinati. ***Perianthii*** foliola exteriora connata in tubum, fundo peruliferum; apice libera, dentiformia. ***Labellum*** oblongum, nudum, ecalcaratum, inclusum, subsessile, basi *gynostemii* apteri elongatæ adnatum. ***Anthera*** terminalis, decidua, biloculares. *Massæ* pollinis octo cereaceæ, per pares filo communi, elastico cohærentes.

Classis Linneana: *Gynandria Monandria.*

Ordo naturalis: *Orchidearum* sectio quinta Browniana.

Habitus. Planta parasitica, rupicola, bulbis bifoliis, uniscapis. *Flores* sanguinei, tubulosi, tridentati, spicati, secundi; ante anthesin distichi.

Genus, *Masdevalliæ*, Ruiz et Pavon et ***Stelidi***, Swartz, intermedium; distinctum floribus tubulosis, ore tridentatis, propter foliola perianthii exteriora, salvis ipsis apicibus, connata; labello subsessili, incluso (unde nomen) basi gynostemii elongatæ adnato; massis pollinis octo; habitu magis ***Stelidi*** accedens.

CRYPTOCHILUS SANGUINEA, *Wall.* TAB. 26.

Legi in Napalia, ad cacumen Chandaghiry, saxicolam, florentem Junio. *E* montibus Cachar, Sylhet confinibus, misit M. R. Smith, anno 1815.

Herba parasitica, repens, laevis *radiculis* fuscis, filiformibus, ramulosis, glabris. ***Bulbi*** ovati, vel oblongi, pollicares, carnosi, obtusi, diphylli, nitidi, aetate nudi, vel vestigio uno alterove vaginarum emarcidarum basi circumdati; dum juniores graciles, subcaulescentes, vaginis que induti quatuor vel quinque lanceolatis, acuminatis, complicatis, bifariis, basi imbricantibus, pallidis, lineatis, margine diluté purpureis, bi- tripollicaribus, inferioribus decrescentibus.—*Folia* duo ex apice bulbi, erecta, leviter divergentia, lanceolata, acuminata, apice minutim bidentata, basi acuta, sex- ad octo-pollicaria, deorsum parum complicata, extrorsum plana cum sulco medio; coriacea, laevia, suprà atroviridia, lucida, subtus glauca, opaca, septem-lineata, costâ carinata, marginibus purpurascentibus. ***Petioli*** crassi, canaliculati, basi parum dilatati: exterior paullo major, margines interioris amplectens. ***Scapus*** ex apice bulbi, erectus, teres, carnosus, crassus, nudus atro-purpureus, basi viridescens, longitudine foliorum, apicem versus leviter complanatus. ***Racemus*** terminalis, erectus, solitarius, quadripollicaris, ante florum expansionem complanatus, anceps, digitum latus; postea oblongus, secundus. ***Rachis*** purpurea, carnosa, planiuscula, flexuosa, demum recta. *Flores* sanguinei, inodori, carnosi, pollicares, cylindrici, approximati, alterni, initio distichi et patentes, post anthesin secundi et adscendentes; extus pilis canis, mollibus, adpressis, geniculatis conspersi; pedicellis suffulti brevissimis, teretibus, pilosulis, lineam longis. ***Bractea*** infra singulum florem solitaria, linearis, acuminata, canaliculata, unguicularis, laevis, purpurea, carnosa, parum incurva, directione floribus oppositâ secunda, persistens. ***Perianthii foliola exteriora*** tria connata in tubum (fig. 1, 2.)

oblongum, tridentatum, emarcescentem, medio levissimè ventricosum, lateribus baseos gynostemii adnatum, basi antrorsum productum in perulam brevissimam, conicam, obtusam, apice parum contractum; dentes faucis lanceolati, subulato-acuminati, subpatuli, inferior (torsione ovarii summus) lateralibus parum major, bilinearis. *Foliola interiora* duo (fig. 3.) distincta, tubo exteriorum tertiò breviora, erecta, linearia, flava, laevia, obtusa, deorsum parum angustata, basi gynostemii lateraliter utrinque inserta. *Labellum* (fig. 4.) anticum, inclusum, flavum, oblongum, foliolis interioribus perianthii parum longius, marginibus versus basin incisurâ parvâ utrinque interruptis; subunguiculatum, ungue brevissimâ, concaviusculâ, subtus convexâ, processui gynostemii absque articulatione insertâ, cumque illa perulam floris occupante. *Lamina* nuda, ovata, canaliculata, subcomplicata, leviter recurva, parum incrassata, obtusa et fere retusa. *Ovarium* clavato oblongum, villis brevibus, canis obsitum, pedicello duplo longius, sexstriatum. *Gynostemium* (fig. 5.) brevissimum, erectum, nudum et inappendiculatum, carnosum, clavatum, labello duplo brevius, leviter adscendens, hinc planiusculum, basi ulterius productum. *Gynizus* anticus, semiorbiculatus, cavus, mucosus. *Clinandrium* terminale, quadridentatum: dentibus minutis, subcrenulatis, duobus posticis fissurâ profundiore separatis. *Anthera* (fig. 6.) terminalis, mobilis, decidua, conica, bilocularis, obtusa, basi truncata. *Massæ pollinis* (fig. 7.) octo, subulatæ, cereaceæ, minutæ, viridiusculæ, per pares, ope fili communis granulosi, elastici, antheræ parieti antico adhærentes. *Capsula* clavata, tubo floris emarcido, recto, fusco coronata, carnosa, pubescens; maturam haud vidi.

Observation.

I can discover no difference between this rare Nepal plant and that of the Cachar mountains. It is a very elegant object when in blossom, differing in the structure of its flowers from all the Orchideæ with which I am acquainted. I call it a rare plant, for I have only met with it once, and that on a single spot on mount Chandaghiry.

CHRYSOBAPHUS, *Wall.*

Perianthium subringens, secundum. *Labelli basis* horizontalis, tubulosa, *gynostemium* liberum hinc amplectens, inde in calcar breve producta; *lamina* adscendens, biloba, unguiculata. *Anthera gynizo* biglanduloso supposita, antica, mobilis, basi adfixa. *Massæ pollinicæ* duæ, clavatæ, bisectiles, e granis subulatis conflatæ; *caudiculis* squamulâ vaginante solutâ inclusis retinaculo communi apici gynostemii insertis.

Classis Linnæana: *Gynandria monandria.*

Ordo naturalis: *Orchidearum* sectio secunda Browniana?

Habitus. Herba terrestris, radicum parasitica. Caulis basi subrepens, radiculis simplicibus fibrosis; supernè bracteatus. *Folia* pauca versus basin plantæ, subcordata, holosericea, vasculis ornata anastomosantibus, aureo-fulgentibus (unde nomen.) Flores racemosi, parvi, albidi, laminâ magnâ, adscendente, volucriformi, biloba.

CHRYSOBAPHUS ROXBURGHII, *Wall.* TAB. 27.

Folium petolatum, Rumph. Amb. 6. p. 93. t. 41. f. 3.

Provenit in pluribus locis Indiæ orientalis continentis et insularum, montosis, sylvanis. Amboina, Everardus Rumphius. Montes Cachar dictæ, Sylhet confines, M. R. Smith, qui plantas vivas pluries misit. Ceylona, Thomas Hardwick. Ipse legi in sylvis umbrosis templorum Sumbhunath et Pusputnath convallis Napaliæ, florentem

Februario. In horto botanico Calcuttensi viget floretque mensibus Novembre—Januario.

Caulis teres, simplex, carnosus, basi pennam scriptoriam crassus, subrepens, vestigiis annulatus foliorum delapsorum, fibras paucas radicales exserentibus simplices, villosas, ad axillas sæpe proliferas ; inde erectus, sex- ad octopollicaris, attenuatus, fuscescens, villis minutis, hyalinis, articulatis, quandoque capitellatis, conspersus, basi foliosus, supernè bracteatus. ***Folia*** quatuor vel quinque, approximata, sparsa, patentia, plana, ovata, subcortata, basi leviter retusa vel rotundata, acuta, pollicaria, bipollicaria, subcarnosa, parum inæquilatera, suprà holosericea, atroviridia, sub lente visa minutim papillosa, subtus dilutè purpurascentia, nitidissimè picta nervis octo decemve parallelis, vix elevatis venisque plurimis transversim reticulatis, ad paginam superiorem colore aureo fulgentibus, aetate coccineis ; ad inferiorem vero laetè viridibus. ***Petioli*** breves, vix unguiculares, canaliculati, desinentes in vaginulas breves, aridas, tenuissimas, membranaceas, nervoso-striatas, caulem arctè amplectentes, ore obliquas, lobuloque obtuso brevi utrinque auctas. ***Bracteæ*** alternæ, remotiusculæ, membranaceæ, lanceolatæ, acuminatæ, pollicares, dilutè rubescentes, glabræ, basi in vaginulam brevissimam desinentes, sursum patulæ, cito emarcescentes. ***Flores*** (fig. 1.) mediocres, albi, odorati, patentes, alterni, distantes, racemum terminalem, erectum, quadri- ad quinquepollicarem, oblongum formantes. ***Rachis*** teres, gracilis, recta, puberula. ***Perianthium*** (fig. 2. 3.) ex viridi rufescens, extus villis mollibus vestitum, secundum, subringens, angulo recto ex summo ovario divergens, cum reliquis partibus floris anticis post expansionem introrsum vel posticum ; subtus ventricosum, suprà ringens. ***Foliola*** distincta ; ***exteriora*** tria magnitudine subæqualia, in galeam conniventia ovatam, ventricoso-gibbosam ; quorum ***anticum*** ovatum, concavum, tres lineas longum, apice acutâ paullo recurvum, basin floris suffultiens ; ***postica*** oblongo-lanceolata, inæquilatera, margines antici obtegentia, acuta, basi angustatâ et obliquâ in lobulum desinentia labelli basi parallelum. ***Interiora*** duo minora, albida, marginibus rufescentibus, laevia, falcata, obliquè acuminata, exterioribus occultata, basi contractâ gynostemii basi lateraliter inserta. ***Labellum*** (fig. 4. 5. 6.) album, laeve, perianthio triplo majus ; basis horizontalis, carnosa, oblonga, cucullato-tubulosa, dorso convexa, subtus perforata hiatu obliquo, in lobulos duos desinente, circum basin gynostemii inserto ; posticè subcalcarata, bidentata ; cavitas laevis, propter callos duos parietales, convergentes sub-bilocularis. ***Lamina*** e dorso basis labelli adscendens, unguiculata, ovarium longitudine æquans, sursum leviter reclinata, biloba, lobis oblongis, obtusis, integerrimis, fere unguicularibus, patulis, verticalibus (superficiebus nempe internis oppositis) basis semilunariter excisicæ angulo antico insertis ; ***unguis*** lanceolatus, lobis parum brevior, leviter canaliculatus, ciliis longis, patentissimis, concoloribus, subulatis, simplici serie ordinatis marginatus. ***Gynostemium*** (fig. 7. 8.) breve, sessile, conicum, carnosum, versus galeam reclinatum, cavitate labelli semiinclusum, cuspidula recurvatâ terminatum, postice carinatum et rimâ longitudinali sulcatum. ***Anthera*** (fig. 8.) magna, ovata, acuminata, verticalis, mobilis, persistens, bilocularis, basi rotundatâ ope pedicelli brevissimi adfixa. ***Clinandrium*** magnum, planiusculum, fere totam gynostemii partem anticam occupans. ***Massæ pollinicæ*** (fig. 8. 9.) duæ, clavatæ, sectiles, medio umbilicatæ, pendulæ, e corpusculis conflatæ numerosissimis, subulatis, facilè solubilibus, in caudiculas abeuntes parallelas et contiguas, extra apicem antheræ porrectas, vaginatas squamulâ propriâ tenuissimâ, pendulâ, liberâ cumque ea retinaculo communi, globoso, minuto apicis gynizi adfixas. ***Gynizus*** anticus, super clinandrium positus, basi utrinque glandulâ convexâ, sessili, viscosâ munitus, medio sulcatus, apice porrectâ squamulas istas vaginales, caudiculas, necnon retinaculum adfigens. ***Ovarium*** sessile, parum villosum, cylindricum, tricostatum, apice contractum et parum incurvum, longitudine bracteæ lanceolatæ suppositæ, mox spiraliter tortum.

Observation.

There is a degree of intricacy in the flowers of this singular plant, which renders their description not a very easy undertaking. By the aid of the accompanying plate,

I hope their structure will be rendered intelligible. I have not been able to assign it with any certainty to any known genus; even the division of the natural family to which it belongs, is a question of doubt with me. Under these circumstances, I have ventured to constitute it into a new genus, coming nearest to *Goodyera*, and, as far as my observation goes, limited to one single species.

The difficulty which Rumphius experienced in transferring the wild plant into his garden, has been abundantly felt by me: and it was only after many fruitless attempts that I at length succeeded in inducing it to survive a couple of years in the Calcutta botanic garden, by planting it on a raised bed, in a rich soil, containing a good quantity of pebbles. It is proliferous from the axils of the fallen leaves at the base of the stem, to which it dies down as the hot weather sets in: new shoots issue forth at the commencement of the rains, in June. I cannot imagine an horticultural object more worthy of accomplishment, than the introduction of this elegant little plant into the gardens of Europe; but although I have in former years repeatedly sent growing plants home, I have reason to fear, that they have all perished during the voyage.

The plant might with propriety be called *Chrysobaphus Petola*; Dann Petola being, according to the above quoted author's testimony, the name, by which the Malays designate it, from a fancied similarity of its painted leaf to a dress so called. But having expressed the allusion in the generic name, I wish to dedicate the plant to the memory of my late friend and predecessor, as a token of my respect for that truly great and good man, who had expressed himself so highly delighted with its beautiful foliage, shortly before quitting his beloved garden for ever.

The upper surface of the leaves is soft like velvet, of a peculiarly bright green color, and elegantly reticulated with nerves and veins of a perfectly golden color and lustre; underneath they are purplish, with green ramifications. The flower is placed vertically on the incurved apex of the ovary, the vaulted perianthium forming its inferior and inner part, as soon as expansion takes place; while the lip occupies the upper and outer part. The body of the latter is horizontal; its anterior part is concealed within the leaves of the perianth; the exterior extremity is free and slightly calcarate; it is hollow, forming a short tube, which receives part of the column through a central slit underneath; its cavity is smooth, and subdivided by two lateral callous tubercles, which almost meet each other at their obtuse ends. The lamina ascends in a slightly recurved direction, and is vertically two-lobed, with a ciliated claw.

DENDROBIUM LEOPARDINUM, *Wall.* TAB. 28.

Arborum parasiticum, laeve, bulbis pluribus, seriatis, oblongis, basi floriferis, vertice monophyllis; foliis coriaceis, rigidis, oblongis, obtusis, petiolatis; floribus fasciculatis, pedunculatis, globoso-campanulatis; processus gynostemii apice adscendente, liberâ.

Legi in monte Chandaghiry, super arborum truncos parasiticum, florens Junio.

Bulbi plurimi, aggregati, in seriem elongatam approximati, alternantes, carnosi, uti tota planta laeves, ovato-oblongi, leviter complanati, sesqui- ad bipollicares, monophylli, squamis interspersi et involuti aridis, magnis, ipsos quandoque superantibus, reticulatis, aetate retiformibus; radiculos e basi emittentes longas, simplices, fibrosas. ***Folium*** unicum ex apice bulbi, erectum, coriaceum, crassum et rigidum, oblongum, obtusum, nunc denticulis binis, obsoletis terminatum, basi acutum, quinque- ad septempollicare, suprà atro-viride, striatum, juxta medium canaliculatum; subtus pallidum, costâ elevatâ carinatâ; *petiolo* suffultum bipollicari, rigido, canaliculato, basi subarticulatâ parum dilatatâ, quandoque squama bulbi involutâ. ***Flores*** (fig. 1.) magni, inodori, globoso-campanulati, basi latâ hinc productiore, calcar breve, obtusissimum aemulante, nutantes, pedunculati, tres quatuorve fasciculati e basi vel latere bulbi, nunc duplo numerosiores

in fasciculos duos dispositi. ***Pedunculi*** carnosi, teretes, clavati, purpureo-punctulati, puberuli, ad basin circumdati ***bracteis*** latè ovatis, acutis, tres vel quatuor lineas longis, laxè imbricantibus, pallidis, punctulatis. ***Perianthium*** (fig. 2.) ex fusco flavescens, punctis crebris purpureis utrinque guttatum, crassiusculum, intus lucidum ; ***foliolis*** ovatis, acutis, regulari ordine dispositis, conniventibus ; ***exterioribus*** fere pollicaribus, concaviusculis : ***lateralibus*** obliquè ovatis, basis latæ medio processui columnæ insertis ; ***antico*** parum angustiore, torsione ovarii postico et superiore. ***Foliola*** interiora illis duplo minora, erecta, basi columnæ lateraliter inserta. ***Labellum*** (fig. 2. 3.) valde crassum et carnosum, fere omnino inclusum, lato-ovatum, acutiusculum, recurvatum, suprà atro-purpureum, medio profundè sulcatum et bicarinatum, secus latera deflexum, subtus concavum et albicans, basi utrinque dentibus aliquot cristatum, sinu centrali articulatione laxâ adfixum extremitati adscendenti, liberæ baseos columnæ ; cæterum mobile, sessile, apice vix extra foliola perianthii lateralia protrudens. ***Gynostemium*** (fig. 2.) inclusum, crassum, subtruncatum, posticè planum et submarginatum, foliolis interioribus brevius, basi productum in processum triplo longiorem, planum, suprà purpureo punctatum, horizontalem, extremitate liberâ adscendente incurvâ, cum basis labelli centro articulatum. ***Gynizus*** (fig. 4.) posticus (torsione ovarii anticus) subquadratus, mucosus, latere utroque glandulâ carnosâ, flavâ, convexâ munitus. ***Clinandrium*** terminale, planiusculum, utrinque unidentatum, anticè adfigens ***antheram*** (fig. 5.) opercularem, mobilem, conicam, acutam, basi truncatam, bilocularem : loculis fundo septiferis. ***Massæ pollinicæ*** (fig. 5.) quatuor, cereaceæ, lanceolatæ, planæ, per pares contiguæ. ***Ovarium*** breve, triangulare, lateribus bisulcatis, puberulum.

Observation.

This species has some resemblance in the shape of its flowers to *Anguloa superba*, Humb. et Bonpl. nov. gen. i. 343. tab. 93. The leaves are remarkably stiff and glossy. The flowers are very showy, of a pale yellow color, marked with innumerable purple, small spots ; the outer sepals, as well as the labellum, are very thick ; the latter dark purple on the upper, and almost white on the under surface. Their structure is entirely that of the genus to which I have referred the plant.

LILIUM LONGIFLORUM, *Wall.* TAB. 29.

Caule gracili, folioso, apice paucifloro, nunc unifloro ; foliis sparsis, numerosis, valde approximatis, linearibus, acuminatissimis, sessilibus ; floribus hypocrateriformibus, nutantibus, tubo longissimo, fauce companulatâ nudâ, limbo patenti.

Incolit sylvas densas Sheopore montis, florens Augusto.

Bulbus (fig. 3.) ovatus, solitarius, bi-tripollicaris, constans squamis carnosis, crassis, subgibbosis, albis, acutis, arctè imbricantibus, e basi emittens fibras longas, copiosas, ramulosas, teretes, subinde parum ramulosas, nunc subtuberosas. ***Caulis*** erectus, gracilis, integerrimus, attenuatus, pallidus, uti tota planta laevis, quatuor ad sex pedes altus, parte inferiore nudâ cicatrisatus a lapsu foliorum, supernè dense foliosus ; basis ejus repens pennam cygneam usque ad digitum minimum crassa, fibrosa et obtecta squamis fuscis, parvis, lanceolatis, more filicis, caules plures propellens, sæpe omni bulbi vestigio orbata. ***Folia*** valde copiosa et approximata, media vix pollicem distantia, erecto-patentia, linearia, attenuato-acuminata, basi angustatâ adnata, quinque ad sex pollicaria, pallida, suprà nitida, leviter complicata, ad lucem visa lineata, subtus glaucescentia, subquinquenervia, carinata ; inferiora sensim breviora et remotiora ; summa tria quatuorve infra flores subverticillata. ***Flores*** duo tresve terminales, raro solitarius, pedunculati, magni, albi, suaveolentes, septem ad novem uncias longi, dum clausi nutantes, clavati ; post anthesin patentissimi, hypocrateriformes, tubo obtusè triangulari longissimo, digitum minimum crasso, basi subgibboso leviterque

retuso, extrorsum sensim ampliato in limbum amplum, patenti-recurvum, tubi dimidium subæquantem, sexlobum, lobis lato-lanceolatis, exterioribus tribus paulò angustioribus; fauce campanulatâ, magnâ, nudâ. *Pedunculi* crassi, teretes, bipollicares, ad medium sæpissimè monophylli. *Sepala* (fig. 1.) ovato-lanceolata, obsoletè repanda, acuminata, deorsum attenuata in unguem linearem, fere prismaticum; exteriorum laminæ interioribus parum angustiores; earum ungues dorso convexi, marginibusque intra costam mediam, depressam, utrinque sulco profundo exaratam, interiorum receptis. *Stamina* (fig. 1.) parallela, recta, conniventia; *filamenta* plana, alba, unguium basi inserta; tria interiorum sulcibus incumbentia canaliculosque formantia. *Antheræ* exsertæ, pollicares, lineares, rectæ, *polline* aureo-flavo. *Ovarium* (fig. 2.) oblongum, sesquipollicare, triangulare, angulis subbilobis; *ovula* plana, serie geminatâ in singulo loculo disposita. *Stylus* rectus, filiformis, apice clavatus. *Stigma* parum extra antherarum apices prominens, crassum, mucosum, trilobum, lobis gibbosis, magnis. Capsulæ maturæ haud visæ.

Observation.

This is a very distinct and noble species, with a tall and slender stem, two thirds of which are thickly furnished with long and linear leaves. The flowers are white, fragrant, extremely large, with a very long and narrow tube, which is gradually widening into an ample, spreading limb; there are generally two or three at the apex of the stem; sometimes only one. In size they exceed those of *Lilium giganteum* (see page 21. tab. 12, 13.) The claws of the three exterior sepals are closely united to those within, in consequence of their sharp margins being confined within the deep furrow, which is formed on each side of the dorsal rib of the latter. The base of the stem I have repeatedly found horizontal, creeping and scaly like that of a fern, without any remainder of a bulb, but marked with a number of vestiges of old stems. I forgot to mention under the Habitat, that this lily is also found towards Sirinuggur, and that I have received plenty of fine specimens collected by Mr. Robert Blinkworth.

EUONYMUS GRANDIFLORA, *Wall.* TAB. 30.

Foliis obovato-oblongis, obtusis, argutè serrulatis; pedunculis gracilibus, complanatis, folia subæquantibus, tri- ad sexfloris; capsulis globosis, pendulis, obsoletè quadrangularibus, calyce tumido, recurvo suffultis, seminibus subgeminatis, dependentibus.

Euonymus grandiflora, Wall. in Roxburghii Flor. Ind. ii. 404.

Sylvæ convallis Napaliæ. Floret mensibus Aprili, Maio; fructus maturescunt Septembre.

Arbuscula ramosa, duodecim circiter pedes alta. *Rami* graciles, teretes, grysei, uti omnes partes læves; *ramuli* oppositi, subcomplanati, obsoletè quadrangulares, sulcis duobus oppositis, gracillimis notati. *Folia* opposita, coriacea, oblonga vel ovata, obtusa, nunc apice rotundata, acutè serrulata, basi integrâ auctiuscula, tri-quadripollicaria, utrinque lævia, suprà lucida, subtus pallida, nervis subopppositis, capillaribus, venisque reticulatis. *Petioli* brevissimi, sulcati. *Pedunculi* axillares, oppositi, gracillimi, filiformes, complanati, folia subæquantes, tri- sexflori; *pedicelli* divaricati, basi articulatâ suffulti bracteolis binis minutis, deciduis. *Flores* (fig. 1. 2. 3.) magni, albi, inodori, parum nutantes, tetrapetali, tetrandri, lineas decem lati. *Calyx* planus, subtruncatus, margine notatus lobulis quatuor obsoletis, erectis, obtusis, ciliatis; post expansionem sensim recurvus, intumescens, carnosus, suprà nitidus, atro-viridis, subtus concavus. *Petala* (fig. 3.) quatuor, magna, patentia, alba, plana, orbiculata, margine crispatulis. *Stamina* (fig. 3.) brevia, distantia, erecta, demum recurva; *filamenta* subulata, persistentia, disco convexo, carnoso calycis basi immersa; *antheræ* ovatæ, erectæ, didymæ.

Ovarium ovato-pyramidatum, semiimmersum, nitidum, quadriloculare, polysporum: *ovula* e placenta axili pendula: *stylus* brevis, persistens; *stigma* obtusum. *Capsula* (fig. 4.) globosa, obsoletè quadrangularis, magnitudine cerasi, suffulta calyce persistente, grandefacto, truncato, convexo, subtus concavo; quadrilocularis, quadrivalvis. *Semina* ovata, atra, lucida, ad medium usque vestita *arillo* coccineo, nitido, minutim lobato et verrucoso; plerumque duo ex singulo loculo, ope funiculorum brevium pendula.

Frutex dum floribus et capsulis onusta valdè elegans. Wall. loco citato.

PRIMULA PETIOLARIS, *Wall.* TAB. 31.

Cespitosa, lævis, foliis ovalibus, utrinque rotundatis, repando-dentatis, crispis; petiolis gracilibus, nudis, elongatis: pedunculis radicalibus pluribus, unifloris, petiolis brevioribus; limbo corollæ plano, laciniis dentatis.

Primula petiolaris, Wall. apud Roxb. Flor. Ind. II. 23.

Primula Cushia, Hamilt. Illustr. J. E. Smith in literis.

Legi frequenter super rupibus ad loca opaca, humida, fontana, Sheopore aliorumque montium. Ad ortum Bagmattee flumminis, Fr. Hamilton. R. Blinkworth misit specimina in Kamaon lecta. Floret a Februario ad Aprilem.

Planta cespitosa, lævis, radice crassâ, carnosâ, subtruncatâ ut in ***Primula acauli*** cui planta nostra accedit, rufescente, odore anisato; *radiculis* copiosis, densis, fibrillosis. *Folia* valdè numerosa, terræ prostrata, tripollicaria, ovalia, utrinque obtusa, nunc apice basive acutiuscula, rugosula et venulosa, marginibus inæqualiter sinuato-dentatis, crispis, dentibus acutis, subulatis, præcipuè in junioribus plantis; utrinque glabra, subtus pallida, ferè albicantia, nervis parallelis, suboppositis, transversalibus. *Petioli* graciles, teretes, suprà exarati sulco profundo, acuto, tri- ad sexpollicares. *Pedunculi* plures, radicales, erecti, uniflori, petiolis parum breviores, teretes, vix puberuli, ad basin bracteâ ovatâ, membranaceâ, acuminatâ instructi; rarò duo tresve basi uniti pedunculoque communi brevissimo suffulti. *Flos* magnus, pallidè cœruleus, inodorus; rarissimè dilutè roseus. *Calyx* (fig. 1.) subinfundibuliformis, quinquangularis; *dentibus* lanceolatis, acuminatis, leviter glanduloso-ciliatis. *Corollæ* (fig. 2.) *tubus* cylindricus, calycem bis superans; *limbus* initio parum infundibuliformis, demum planus, divisus in *laciniis* quinque patentissimas, obovatas, apice bi- tridentatas, vel crenulatas, tubum longitudine æquantes; faux luteola, pervia. *Antheræ* versus medium tubi sessiles. *Stigma* oblongum. Wallich loco citato.

Observation.

I have somewhat modified the specific character, and have added a few points to the description, which was printed six years ago in Roxburgh's Flora Indica, having since then had an opportunity of examining this handsome and rather common species in its native soil. I was assured that its Newar name is *Jhooe Soah;* but in a letter from the illustrious President of the Linnæan Society, I am informed that my most worthy friend Dr. Hamilton sent specimens of the plant home, labelled *Primula Cushia:* a name which he no doubt derived from native sources, and which I should have adopted on the present occasion, in preference to mine, if any faith could be put on the correctness of the appellations, which the people of Nepal so bountifully, and that often at a moment's warning, bestow on the vegetable productions of their country; and if it were not so very seldom, that any plant can be identified by means of them.

PRIMULA ROTUNDIFOLIA, *Wall.* TAB. 32. *(fig. sinistra.)*

Foliis rotundato-cordatis, grossè dentatis, subtus umbellâque luteo-farinosis; petiolis graecilibus, longissimis; *involucro* setaceo, pedunculis dimidio breviore; *tubo* corollae longo, *laciniis* ovatis crenulatis, *fauce* perviâ, leviter marginatâ.

Primula rotundifolia, Wall. l. cit. 18.

Incolit rupes elevatos versus Gossain Than Himaleyæ : floret Julio.

Species pulcherrima, *radice* divisâ in fibras graciles, rubicundas. *Folia* numerosa, patentia, rotundato-cordata, obtusa, dentibus notata triangularibus, acutis, subinæqualibus, sinu baseos integro, lobis rotundatis, bipollicaria; suprà glabra, parum reticulata ; subtus densè obsita farinâ luteo-albâ. *Petioli* graciles, canaliculati, quater ad sexies foliis longiores, dum juniores farinosi, ætati glabri, ad basin membranacei et dilatati, ibique interspersi squamis radicalibus ovatis, acutis ut in *P. denticulata*. *Scapus* lævis, gracilis, teres, octo ad decem pollices longus, erectus, inanis. *Umbella* magna, hemisphærica, patens, farinosa, pollices tres lata. *Flores* purpurei, circiter duodecim. *Pedunculi* puberuli, semipollicares ; capsuliferi duplo longiores. *Involucri bracteolæ* lanceolatæ, pedunculis breviores, persistentes. *Calyx* (fig. 1.) quinquefidus, basi gibbosus ; *laciniæ* lanceolatæ, acutæ, utrinque farinosæ. *Corollæ* (fig. 2.) *tubus* cylindricus, calyce quadruplo longior, supernè sensim dilatatus; *faux* ampla, pervia, annulo membranaceo, flavicante marginata ; *limbus* planus, patens, tubi dimidium æquans, *lobi* obovati, subretusi, leviter crenulati. *Filamenta* medio tubi inserta ; *antheræ* oblongæ. *Ovarium* cylindricum, lævе ; *stylus* filiformis : *stigma* subcapitatum, infra faucem. *Capsula* (fig. 3.) fusca, lævis, oblonga, calyce duplo longior, dentibus dehiscens quinque ad octo, inæqualibus, demum in totidem valvulas recurvas separatis. *Placenta* globosa, pedicellata.

Primula rotundifolia, Pallas, quæ admodum a nostra planta differt, eadem est ac P. *sibirica* Jaqv. Wall. loc. cit.

PRIMULA FLORIBUNDA, *Wall.* TAB. 33.

Pubescens, absque ulla farina : foliis obovatis, obtusis vel acutiusculis, inæqualiter sinuato-dentatis, in petiolum marginatum attenuatis; scapis numerosis, debilibus, subdiffusis, foliis longioribus ; floribus pedunculatis, valdè copiosis, dispositis in verticillis pluribus ; involucris magnis, foliaceis, lanceolatis ; calyce ovato corollâque pubescentibus.

Legi super rupibus humidis, umbrosis, prope Sansedarra et in monte Karkaulee, in Deyra Doon, florentem et capsulis onustam maturis Aprili.

Radix subligniosa, cylindrica, attenuata, longius descendens, fibras emittens aliquot ramulosas. *Folia* densè conferta, super terram patula, obovata, vel subovata, bi- usque ad quinquepollicaria, sæpius acutiuscula, valdè irregulariter sinuato-dentata, dentibus triangularibus, acutis, nunc subincisa, utrinque mollia propter villos canos, breves, juxta vasorum tractus copiosos ; dum juniora densè villosa ; suprà saturatè viridia, subtus pallida, costâ latâ, nervisque alternis, obliquis, elevatis; vix reticulata, subcarnosa, basin versus attenuata, *petiolo* suffulta canaliculato, marginato, bi-tripollicari. *Scapi* sex ad octo, graciles, debiles, nunc, dum fructigeri, terræ incumbentes, foliis dimidio vel duplo longiores, villosuli, teretes, carnosi, dimidiâ inferiore parte nudi, superiore gerentes *verticillos* tres ad quinque, raro pauciores, convexas, parum distantes. *Flores* flavi, odorati, villosuli, pedunculati, numerosi, patentes. *Pedunculi* teretes, pollicares, villosi, nudi. *Involucrum* verticilli constans *bracteis* tribus ad quinque, quin septem, sessilibus, distinctis, lanceolatis, acuminatis, acutè et inæqualiter dentatis, viridibus, foliaceis, pollicaribus, nunc longioribus, pedunculos excedentibus, erecto-patulis, persistentibus. *Calyx* (fig. 1.) villosulus, ovatus, tubo corollæ dimidio brevior, laciniis lanceolatis, longè acuminatis, patentibus. *Corolla* (fig. 2.) magnitudinis mediocris, extus villosula ; *tubus* gracilis, longiusculus, semipollicaris, medio parum dilatatus : *limbus* patens, planus, tubo brevior, laciniis cuneato-obovatis, integerrimis, retusis ; *faux* nuda, pervia. *Stamina* in medio tubi. *Pistillum* glabrum ; *ovarium* globosum : *stylus* filiformis ;

stigma subcapitatum in fauce. *Capsula* (fig. 3. 4. 5.) ovata, lævis, straminea, intus lucida, calyce campanulato, parum aucto inclusa, magnitudine grani piperis, ad medium dehiscens in valvulas quinque subæquales, lanceolatas, acutas. *Placenta* globosa, foveolato-rugosula, pedicellata. *Semina* (fig. 6.) copiosa, atra, leviter angulata.

Observation.

This curious and elegant plant is the second species of East Indian Primroses with whorled flowers, which has come to my knowledge. A description and figure of one of these, *P. prolifera*, Wall. was laid before the Asiatic Society of Calcutta, about eight years ago, and subsequently inserted in the 13th volume of their Researches. It differs in being perfectly smooth in all its parts, whereas ours is covered with many short, whitish, subdiaphanous hairs; its leaves are oblong, minutely dentate; ours obovate, notched, and toothed, with broad triangular teeth. In that, I have only observed one erect scape to each root; in this there are always several, and frequently as many as eight spreading, or decumbent scapes, the upper part of which has rarely less than three, and often twice as many rounded verticils, each consisting of about a dozen of yellow, fragrant, pubescent, slightly spreading flowers; each supported by an involucrum of three, five, or even seven large, foliaceous, lanceolate, dentate, acuminate, villous bractes, which are linear only during the infancy of the inflorescence. The calyx is rounded, subglobular at the base, and not tubular: the lobes of the corolla entire, and not crenulate, as in *P. prolifera*. To *P. verticillata* of Forskael, it seems to come nearer than to the species just mentioned; but it differs chiefly in being villous, and destitute of all mealiness, and in the tube of the corol being much shorter.

I discovered our plant in full flower and fruit in April 1825, among rocks, in cool, moist, and shady situations, near mountain streams or springs, in that part of Sirmoor which forms the delicious Deyra Doon, (the valley of Deyra;) which is elevated about 2300 feet above the sea, according to the measurements of my excellent friend Captain Alexander Gerard; especially near Sausedarra, (or the Dripping-Cave,) and on the mountain called Karkaulee, which confines the valley to the northward, at an elevation of about 2500 to 3000 feet above the level of the latter.

PRIMULA STUARTII, *Wall.* TAB. 34.

Foliis oblongis, acutis, margine revolutis, integerrimis, vel pectinato-dentatis: dentibus teretibus, parallelis, approximatis; per petiolum decurrentibus, subtus umbellâque multiflorâ farinosis; scapo foliis longiore; calyce ligulato, tubum æquante; fauce nudâ, infundibuliformi; laciniis obovatis, retusis, integerrimis vel denticulatis.

Primula Stuartii, Wall. apud Roxb. Flor. Ind. ii. page 20.

Habitat in Himaleya, versus Gossain Than. Floret et fructus profert tempore pluvioso. Etiam habui e montibus Kumaon, ubi legit R. Blinkworth.

Nomen Parbutteum (*generale* hujus generis et Androsacearum) *Nitaha*.

Planta pedalis et ultra, radice carnosâ, constante fibris rubicundis, longis, crassis, teretibus. *Folia* numerosa, erectiuscula, cum petiolis pollices octo ad decem emetientia, oblonga, vel lanceolato-oblonga, acuta, deorsum attenuata at sæpius per petiolum decurrentia, ad margines dum juniora revoluta, nunc integerrima (fig. B.); sæpius verò pectinata dentibus creberrimis, parallelis, teretibus, brevibus; plana, subcarnosa, suprà pallida, subglaucescentia, subtus pedunculis, calycibusque utrinque, densè pulverulentis farinâ flavicante, subsulphureâ; tenuiter reticulata, costâ prominente. *Petioli* folia longitudine æquantes, marginati, basi circumdati bracteis pluribus ovatis, acutis, membranaceis. *Scapus* ex singula radice unicus, erectus, teres, foliis semel bisve longior, crassiusculus. *Umbella* erecta, patens, subglobosa, duodecimflora; rarò ad centrum subcomposita. *Involucri foliola* lanceolata, acuta, uninervia, basi subconnata, tres lineas longa. ***Flores***

magni, odorati, flavi, vel atropurpurei. *Pedunculi* leviter angulosi, inæquales, fructigeri (fig. 3.) elongati, quandoque tripollicares. *Calyx* (fig. 3.) quinquecarinatus, infundibuliformis, utrinque pulverulentus; *laciniæ* ligulatæ, erectiusculæ, acutæ, vel obtusæ, tubo corollæ parum breviores. *Corollæ* (fig. 4.) laciniæ ovatæ, nunc obovatæ, parum retusæ, tubum æquantes, integerrimæ vel (fig. 2.) dentibus copiosis linearibus fimbratæ. *Antheræ* ad medium tubi. *Stigma* in fauce, leviter retusum. *Capsula* (fig. 5. 6. 7.) oblonga, calyce persistente parum brevior, fusca, lævis, initio parum farinosa, inæqualiter dehiscens in valvulas quatuor vel quinque, nunc bidentatas. *Semina* minuta. *Placenta* (fig. 8.) subcylindrica, elongata, fere sessilis.

Observation.

The above description is chiefly taken from the account I have given in Roxburgh's Flora Indica. The specimens which I procured from Gossain Than, while I was in Nepal, have strengthened me in the opinion, that, notwithstanding the striking difference observable in some of them, they belong to one and the same species, varying in the following respects. The margins of the leaves are more or less revolute, and either perfectly entire,or fringed with very numerous, short, cylindric teeth, placed close to each other. The flowers are delightfully fragrant, generally bright yellow, but sometimes of a deep purple color. The margins of the laciniæ are either entire, or fringed with many unequal, linear teeth. The plant is large and showy; the fruitbearing stalk measures sometimes full two feet in height. The under side of the leaves, the involucrum, peduncles, and calyces are covered with much yellow mealiness, as are also all the tender parts.

WULFENIA OBLIQUA, *Wall.* TAB. 35.

Puberula, foliis alternis, ovatis, basi obliquis, altero latere valdè abbreviatis, utrinque puberulis; racemis terminalibus, gracilibus, secundis; corollis tubulosis, labio superiore bidentato, inferiore elongato, angustato, obsoletè tridentato.

Legi in sylvis Napaliæ, florentem et fructigeram sub fine pluviarum. Etiam habui e montibus Pundua, Sylhet confinibus.

Herba carnosa, pallida, pube hyalinâ, brevissimâ conspersa, pedalis, sesquipedalis, erecta, subdichotomè ramosa, vel ferè simplex. *Radix* fibrosa. *Caulis* teres, lineatus, subdiaphanus, basi pennam cygneam crassus, super insertionem foliorum parum intumescens, sursum attenuatus et emittens ramos paucos, graciles, alternos, plerumque simplices. *Folia* alterna, remota, patentia, membranacea et tenuia, brevè petiolata, tri- ad quinquepollicaria, obliquè ovata, acuminata, integerrima, obscurè repandula, basi valdè inæqualia: latere altero rotundato, nunc subcordato; altero duplo angustiore, plus minusve abbreviato, attenuato, obtuso; utrinque ad vasa puberula, suprà atroviridia, lucida, subtus opaca et pallida, nervis valdè copiosis, approximatis, parallelis, obliquè arcuatis, ad marginem usque excurrentibus, venulosa; siccitate cœrulescentia, disco interdum rufidulo. *Petioli* teretes, puberuli, suprà plano-sulcati. *Racemi* caulis et ramorum terminales, paniculati, oblongi, attenuati, recti, secundi, densiflori, digitum longi. *Flores* (fig. 1. 2.) parvi, adscendentes, secundi, alterni, cylindrici, dilutè cœrulei, approximati, unguem longi. *Pedunculi* bilineares, basi bracteolâ lineari sulti, *rachisque* teretes, puberuli. *Calyx* (fig. 3.) oblongus, quinquefidus, puberulus, membranaceus; *laciniæ* lanceolatæ, acutæ, ciliatæ. *Corolla* (fig. 4.) calyce duplo longior, glabra, tubo parum incurvo, cylindrico, albicante, *limbo* parvo, bilabiato, *fauce* nudâ, personatâ, *palato* convexo. *Labium superius* brevissimum, vix lineam emetiens, recurvum, obtusè bidentatum; *inferius* elongatum, angustum, subtus concavum, superiore triplo longius, tridentatum, acutum, dentibus lateralibus minutis, revolutis. *Filamenta* quatuor infrà labium superius tubi medio inserta, capillacea, glabra, didynama; *intermedia* duo sterilia, brevissima; *antheræ* (fig. 5.) peltatæ, subreniformes,

glabræ, vix faucem attingentes, labii superioris basi obtectæ, conniventes et contiguæ, haud verò connexæ. ***Pistillum*** (fig. 3.) longitudine staminum duorum fertilium. ***Ovarium*** parvum, ovatum, leviter complanatum, glabrum, bisulcatum, basi hinc munitum ***annulo*** membranaceo, incompleto, angustissimo, adpresso, persistente ; uniloculare, ***ovulis*** copiosis, insertis super placentis duabus latis, oppositis, parietalibus. ***Capsula*** (fig. 8.) glabra, ovata, compressa, fusca, calyce persistente obtecta (fig. 7.) eodemque paulò brevior, lineas duas emetiens, basi suffulta nectario isto incompleto, immutato, unilocularis, infrà medium bivalvis : valvulæ (fig. 10.) planæ, bidentatæ, dentibus triangularibus, acutis. ***Placentæ*** (fig. 9. 10.) duæ, oppositæ, planæ, ovatæ, subcarnosæ, valvarum axi longitudinaliter insertæ, superficie planâ, seminiferâ contiguæ, unde sectio capsulæ immaturæ ovariique primo intuitu bilocularis evadet. Semina valdè minuta, et copiosa, ferruginea.

Observation.

In the structure of the ovary and capsule, the plant recedes somewhat from the character of the family of *Scrophularinæ*, as well as from the genus under which I have placed it. As far as I can judge from a dried specimen of ***Wulfenia carinthiaca***, which I owe to the liberality of Proff. De Candolle, the curiously interrupted, lateral, annular nectary of the ovarium exists also in that species. The leaves of our plant are very oblique at their base ; one side being sometimes an inch shorter than the other, leaving the base of the rib half naked. Since the plate was struck off, I have had the pleasure of receiving specimens of another oblique-leaved species from P. J. Noton, Esq. Assay Master at Bombay, gathered by that gentleman in a swamp near Nilghirry, which I have great satisfaction in calling ***Wulfenia Notoniana***, and which may be distinguished by the following specific character : Caule carnoso, hinc lineâ densè villosâ notato ; foliis alternis, ovatis obliquis, basi dimidiato-cordatis, suprà juxta costam et margines pilosis, subtus lævibus ; ***racemo*** terminali, brevi, secundo ; rachi pedunculisque villosis ; labio inferiore corollæ indiviso, maximo, obovato. The flowers are much larger in this species, than in *W. obliqua*.

ADAMIA, *Wall.*

Calyx ovario adnatus, limbo quinquedentatus. ***Petala*** quinque, dentibus calycinis alternantia, epigyna, verticem ovarii ambientia. ***Stamina*** decem, quorum alterna petalis opposita. ***Styli*** quinque. ***Stigmata*** clavata, sub-biloba. ***Bacca*** infera, coronata, subquinquelocularis, polysperma.

Classis Linnæana ***Decandria pentagynia***.

Ordo naturalis: ***Araliaceæ?***

Genus consecratum memoriæ amici et fautoris carissimi, sempiternò colendæ, beati John Adam, armigeri, in consiliis supremis Calcuttensibus quondam præsidis, botanices, horticulturæ et rerum agrestium in Indiis orientalibus strenui et indefessi promotoris.

Habitus. Frutex elegans, ramosa. Folia opposita, serrata, exstipulata. Flores paniculati, cyanei. Fructus valdè numerosi, cœrulei, baccati.

ADAMIA CYANEA, *Wall.* TAB. 36.

Incolit apricos saxosos, montanos, a Bechiaco usque ad vallem magnam : floret Maio, Junio; fructus maturi Octobre—Decembre.

Nomen Parbutteum ***Bansook***.

Frutex ramosissima, paniculata, tri- quadripedalis. *Caulis* pollicem ad sesquipollicem crassus, *cortice* spongioso, albicante, glabro, *ligno* pallido. *Rami* oppositi, teretes vel obsoletè quadrangulares, glabri, glaucescentes; supernè purpurascentes, pilis adpressis puberuli : juniores cum foliis densè villosi. *Folia* opposita, patentissima, approximata, subcarnosa, oblongo-lanceolata, acuminata, utrinque attenuata, serrata, serraturis incurvis, cuspidato-acutis ; suprà opaca, rugosula, glabra, *subtus* pallida, juxta costam nervosque elevatos, parallelos, approximatos, obliquos pubescentia, transversimque reticulato-venosa. *Petioli* pollicares, teretes, suprà plani, propter basin folii acutam, integerrimam, decurrentem parum marginati. *Stipulæ* nullæ, nisi lineola elevata, nunc puberula, bases petiolorum connectens. *Panicula* magna, terminalis, lato-ovata, nuda, vel foliolis floralibus lanceolatis, integerrimis, paucis basi munita, foliorum supremorum pari brevior, densiflora ; ramis oppositis, villosis, apice subtrichotomis. *Bracteæ* nullæ. *Flores* (fig. 1. 2. 3.) valdè copiosi, dilutè cærulei, nunc rosei, extus albicantes, inodori, plures fasciculati vel subumbellati, *pedunculis* brevibus, villosis, subcoloratis. *Calyx* superus, i. e. ovario cohærens, limbo parvo, libero quinquedentatus, dentibus minutis, patulis, ovatis, acutis, distantibus, puberulis. *Corolla* carnosa, glabra, quinquepetala, *æstivatione* valvata et ovato-obtusa. *Petala* lanceolata, acuta, trilinearia, patentissima, demum recurva, basi latâ calyci, intra limbum inserta dentibusque ejus alternantia. *Stamina* decem patentia, petalis paulò breviora, hisque alternatim opposita, subæqualia; *filamenta* subulata, cœrulescentia, carnosa, glabra ; *antheræ* magnæ, ovatæ, biloculares, basi insertæ, ante anthesin quinque petalis oppositæ deflexæ, reliquæ erectæ (fig. 4.). *Ovarium* (fig. 6.) inferum, globosum, magnitudine grani piperis nigri, pubescens, pseudo-quinqueloculare, vertice intra petala parum elevatum; *ovula* minuta, placentis quinque parietalibus, carnosis adfixa. *Styli* quinque, erectiusculi, carnosi, apice dilatati in *stigma* clavatum, compressum, margine intumescens et subbilobum (fig. 5.). *Baccæ* (fig. 8. 9. 10.) admodum copiosæ, paniculatæ, globosæ, glabræ, cyaneæ, magnitudine fructus ribesiæ, carne crassâ, pallidâ, spongiosâ, subquinqueloculares, polysperma, infrà verticem convexam, centro retusam et stylis persistentibus terminatam, coronata calycis dentibus persistentibus, marginulâ angustissimâ unitis. *Semina* (fig. 11. 12. 13.) numerosissima, minuta, pyriformia, striatula, placentis quinque parietalibus carnosis, demum evanidis inserta, sessilia, totam cavitatem fructus replentia. *Integumentum* simplex, fuscum, membranaceum. *Perispermum* carnosum, semini conforme. *Embryo* cylindricus, axin fere totam perispermi occupans. *Cotyledones* ovatæ, obtusæ, dorso convexæ, breves. *Radicula* obtusa, hilum respiciens.

Observation.

I am not able satisfactorily to assign this shrub to its proper place in the natural system. To the 12th class of Jussieu it appears to have a greater affinity than to any other, on account of its inferior, single germen, polypetalous corollæ, and number of styles and stamens ; but it differs in having an erect embryo, which is lodged in a soft and fleshy perisperm, and in bearing opposite leaves, the petiols of which are even, not sheathing at the base. In habit it approaches to *Rubiaceæ* ; but the polypetalous corolla, numerous stamina, and absence of stipulas, distinguish it. It has a slight connexion with the polypetalous *Caprifolia*, and with Jussieu's ambiguous section of Ericeæ with an inferior fruit. Under all these circumstances, I suggest the family of *Araliæ* for its temporary station. It is a branchy shrub, which delights in open and exposed mountainous situations. Either as covered with its large panicles of pale-blue or pink flowers, or loaded with a profusion of deep blue berries, the plant is an object of great elegance, and as such, is very desirable in gardens. I am not aware that any part of it is employed for economical or medicinal purposes.

THUNBERGIA COCCINEA, *Wall.* TAB. 37.

Scandens, foliis oblongo-ovatis, cordatis, subhastatis, sinuato-dentatis, acuminatis ; racemis longissimis ramisque pendulis ; corollæ fauce compressâ, limbo reflexo.

Habitat in sylvis densis Napaliæ, super arbores altos scandens ; præcipuè inter Hetounra et Chesapanny, juxta flumen Rapty tortuosum ; florens tempore pluvioso et frigido ; fructus maturescunt præterlapsis mensibus tribus. E montibus Pundua, Sylhet confinibus, specimina sicca florentia et fructigera olim misit M. R. Smith, et nuperius F. De Silva lecta ad finem pluviarum. In horto botanico Calcuttensi floret initio anni, capsulæque maturescunt Martio.

Frutex ramosissimus, altè super arbores scandens, *caule* nodoso, valdè torto, digitum medium crasso, *cortice* gryseo, glabro obtecto, *ligno* minutim et radiatim poroso. ***Rami*** longissimi, graciles, flaccidi, penduli, compresso-quadrangulares, virides, scabriusculi, ad insertionem foliorum nodoso-incrassati. ***Folia*** opposita, patentia, vel adscendentia, petiolata, ovata vel oblonga, attenuato-acuminata, sinuata, dentata, dentibus remotis, obtusiusculis, ad basin plerumque angulata, cordata, sinu lobulisque obtusis, nunc hastata lobis divaricatis, plus minusve elongatis ; pilis raris, adpressis, utrinque asperula, opaca, suprà atroviridia, subtus pallida, quinquenervia, nervis carinatis, reticulato-venosa, quinquepollicaria ad palmaria; superiora oblongo-cordata, ferè integerrima, brevè petiolata vel sessilia. ***Petioli*** graciles, teretes, suprà plano-sulcati, marginibus prominentibus, acutis, basi apiceque incrassati, sæpius curvi vel torti, pollicares ad tripollicares, summorum foliorum unguiculares vel infrà. ***Stipulæ*** nullæ. ***Racemi*** terminales ramorum, flaccidi, penduli, multiflori, valdè elongati, pedales, bipedales, quin tripedales, oblongi, foliaceo-bracteati. ***Pedunculus*** communis tenerrimus, filiformis, vix puberulus, teres, ad insertionem fasciculorum oppositorum dilatato-incrassatus et tuberculatus. ***Bracteæ*** foliaceæ, lanceolatæ, sessiles, valdè acuminatæ, integerrimæ, trinerviæ, pedunculis dimidio longiores, oppositæ infra singulos fasciculos, pubescentes, novellæ purpurascentes; inferiores sensim majores, foliis similes. ***Flores*** (fig. 1.) speciosi, coccinei, pollicem longi, inodori, tres ad sex seriatim approximati in fasciculos oppositos, pollicem vel duos distantes, quorum inferius par axillare foliorum summorum sessilium. ***Pedunculi*** adscendentes, clavati, puberuli, ferè pollicares. ***Calyx*** (fig. 2.) membranaceus, spathaceus, compressus, oblongus, apice bidentatus, hinc fissus, demumque per totum dorsum divisus in *sepala* duo lanceolata, acuta, ciliata, purpurascentia, trinervia, nervis viridibus gracilibus. ***Corollæ*** (fig. 2.) tubus compressus, sepalis parum longior, ferè pollicaris, lævis, flaveseens, deorsum angustatus, basi dilatatâ circumdatus annulo carnoso, angustissimo, inæqualiter crenulato, albido, persistente, calyce multoties breviore. ***Limbus*** reflexus, quinquelobus, tubo parum brevior : *lobi* obovato-rotundati, retusi, supernè levissimè crenulati, læves, plani, suprà coccinei, subtus flavicantes, fere unguiculares, laterales tubo adpressi, inferior parum descendens ; internedii reliquis vix minores. ***Faux*** oblonga, compressa, nuda. ***Filamenta*** quatuor fertilia, didynama, carnosa, lævia, complanata, flavicantia, basi parum dilatatá supra basin tubi inserta. ***Antheræ*** erectæ, oblongæ, compressæ, cuspidatæ ; *loculi* basi pilosula, bicalcarata, calcaribus subulatis, hyalinis, divergentibus, inæqualibus. ***Filamentum*** quintum sterile, inter bases filamentorum superiorum, subulatum, incurvum, trilineare. ***Ovarium*** ovatum, læve, nitidum, *disco* hypogyno tumido, carnoso, flavo, semiimmersum. ***Stylus*** lævis, filiformis. ***Stigma*** clavatum, compressum, bilobum, obtusum, nutans, antheras parum excedens cumque iis faucem corollæ occupans : lobus inferior plicatus, superiorem paulò minorem amplectens. ***Capsula*** (fig. 3.) nutans, fusca, glabra, ferè sesquipollicaris, basi globoso-ventricosâ cerasum parvum æquante, suffulta nectariis istis, duobus hypogynis, persistentibus, planis, coriaceis, pedunculum terminantibus; supernè abiens in rostrum solidum, rigidum, acutum, compressum, marginibus rotundatum ; ab apice elasticè dessiliens in valvulas (fig. 4.) duas, recurvas ; bilocularis, tetrasperma, seminibus duobus sæpissimè abortivis. ***Dissepimentum*** con-

trarium, demum bipartitum, utrinque adfigens *placentam* carnosam, convexam, seminis cavitatem replentem, maturitate evanidam. *Semina* (fig. 5. 6.) grandia, fusca, placentæformia, inæqualiter tri- vel tetragona, scrobiculato-rugosula, scabra, dorso convexa, marginibus subtruncatis, planiusculis, ventre concaviusculo, ad centrum umbilico parvulo notato. *Integumentum* simplex, membranaceum, aretè adhærens. *Perispermum* nullum*.

Observation.

This beautiful species grows sometimes to a vast extent, covering large trees, and forming pendulous, green, thick carpets, ornamented with long festoons of scarlet racemes. The leaves vary considerable in figure, from round-cordate, to oblong, with hastate base. The flowers are arranged on each side of the fascicles in a simple series, on the prominent, semilunar tubercles of the common peduncle, on the upper or convex side of which the pedicels are inserted close to each other.

There are two other species which grow wild in Nepal; namely, a densely villous variety of *Thunbergia fragrans*, which I found on the mountains surrounding the great valley, in blossom and fruit during the rainy season; it is perhaps a distinct species, although nearly allied to that plant, in its wild state, as it is found on the coasts of Coromandel and Malabar; and *Thunbergia grandiflora*, Roxb. which has been figured in Botan. Register, vol. 6. 495. This noble climber is common in rocky and shady situations, in most parts of Hindostan. I have found it about Monghir and Rajmahl; in the Turraye of Oude, towards the foot of the hills; at Hurdwar, and in Deyra Doon. It grows wild also in China, and was introduced from thence by John Reeves, Esq. into the Honorable Company's botanic garden at Calcutta in 1820, where it thrives and blossoms luxuriantly. I took it at first to be a different plant from *Th. grandiflora*, the leaves of the young plants being strongly jagged and lobed; but I can discover no specific difference in the full grown shrub.

I have lately got possession of a new and exceedingly interesting species, with deep purple flowers, yellow within the tube, which was discovered on the Nilghirry by my worthy friend the Venerable Archdeacon Hawtayne, and by him introduced into the botanic garden in 1824, where it blossomed soon afterwards, during the cold season. At the moment I write these lines, in January 1826, it is extremely ornamental, being covered profusely with flowers, as well as with unripe capsules. The shrub is thickly furnished with firm and leathery, glaucous, entire and nearly sessile leaves, which contrast beautifully with the purple inflorescence. It may be characterised in the following manner: *Thunbergia Hawtayneana*, Wall. scandens, lævis, glauca, foliis ovato-cordatis, obtusiusculis, subsessilibus, amplexicaulibus, coriaceis, integerrimis; floribus axillaribus oppositis; tubo elongato, limbo patentissimo; seminibus semiglobosis, lævibus.

Besides the above, I have a species from Madagascar, introduced by my most excellent friend C. Telfair, Esq. of the Mauritius, under the name of *Th. angulata*, which seems to be different from *Th. alata*, Bot. Mag. vol. 51. N. 2591. It has not yet blossomed.

GYMNEMA NAPALENSE, *Wall.* TAB. 38.

Volubile; foliis ovato-oblongis, acuminatis, glabris, basi cordatis; cymis folio brevioribus: floribus densis, subumbellatis, fauce nudis.

Legi in pluribus locis depressis et montanis, florens e mense Junii ad Novembrim. In horto botanico Calcuttæ floret et fructus producit sub pluviis.

Frutex magna, ramosissima, volubilis, valdè lactescens. *Rami* teretes, glaberrimi, subnodosi; juniores puberuli, fuscescentes. *Folia* opposita, patentia, membranacea, glabra, oblonga, vel ovato-oblonga, acuminata, basi cordata, lobis rotundatis, nunc

* The intricate structure of the seed, I shall be able to explain in a subsequent page.

ovata basi retusa: quatnor- ad sexpollicaria, interstitiis plerumque longiora; suprà atroviridia, nitida, subtus glauca, minutim reticulata, costâ nervisque intra marginem arcuatim anastomosantibus, puberulis; novella pilosula. ***Petioli*** unguiculares vel semipollicares, teretes, suprà sulcati, basi intra axillam, apiceque in centro sinus muniti acervulo ciliarum subulatarum. ***Cymæ*** extra-axillares, foliis plus minusve breviores, pedunculatæ, densifloræ. ***Pedunculi*** teretes, pilosuli, bi- tripollicares; ***partiales*** inæquales; ***bracteæ*** minutæ, subulatæ ad divisuras. ***Flores*** (fig. 1. 2.) brevè pedicellati, umbellati, flavi, inodori, glabri, ***æstivatione valvati***. ***Calycis laciniæ*** (fig. 3.) ovatæ, obtusæ, adpressæ, ciliatæ, corollâ quadruplo breviores. ***Corolla*** (fig. 4.) urceolata, glabra; ***laciniæ*** ovatæ, acutæ, patulæ, ad lentem ciliatæ; ***faux*** nuda, edentula, pervia. ***Tubus stamineus*** (fig. 5. id. transv. sect. fig. 6.) cylindricus, longiusculus, attenuatus, inclusus, nudus, quinquesulcatus, sulcis lineolâ elevatâ carinatis, deorsum ulterius productus in lobulos quinque minutos, cum filamentorum basi continuos. ***Antheræ*** ovatæ, obtusæ, membranulâ albâ marginatæ, supra stigma conniventes totumque fere obtegentes. ***Massæ pollinis*** cereaceæ, lineari-cuneatæ, erectæ, per paria ***corpusculis*** oblongis, sulcatis, ope pedicelli brevissimi basi insertæ. ***Ovaria*** oblonga, lævia; ***stylus*** brevissimus; ***stigma*** (fig. 8. 9.) quinquangulare, quinquelobum: lobis compressis, subdivaricatis. ***Folliculi*** (fig. 10.) duo, læves, fusci, subulati, acuminati, bipollicares, valdè divaricati. ***Semina*** (fig. 11.) plana, ferruginea, marginulata, comâ sericeâ coronata.

Observation.

The leaves of this climber vary considerably, from ovate to oblong, with almost parallel margins. The valvate æstivation of the corolla connects the plant in some degree with ***Leptadenia***, from which it is otherwise distinct. I have another species from Nepal, which I found growing very rarely about the valley. I subjoin the specific character of that and some other Indian species of ***Jymnema***.

Gymnema hirsutum, Wall. Volubile, hirsutum; foliis ovatis, acuminatis, basi rotundatis: corymbis folio brevioribus, flexuosis: floribus racemosis, longè pedunculatis, bracteis minutis, copiosis, squarrosis; corollâ fauce nudâ.

Legi in monte Chandagiry, etiam ad Sanko, floribus et folliculis maturis Augusto.

Gymnema sagittatum, Wall. Volubile, læve; foliis oblongo-ovatis, acuminatis, basi obtusis; corymbis folia subæquantibus, trifidis, puberulis; corollis subcampanulatis, fauce edendulis; antheris subsagittatis.

Specimina e montibus haud procul a Sylhet distantibus misit De Silva.

Gymnema attenuatum, Wall. Volubile, læve, foliis lanceolatis, valdè attenuatis; corymbis gracilibus, flexuosis, folio sublongioribus; corollis subrotatis, fauce edentulis; massis divaricatis, subhorizontalibus, ovatis; corpusculis apice bidentatis.

In hortum botanicum introductum e Sylhet a De Silva, 1822; floruit insequente anno. An proprii generis?

Gymnema parvifolium, Wall. Volubile, ramis umbellisque villosis; foliis ovatis, glabris, utrinque acutis, umbellis petiolo vix longioribus; corollis rotatis, fauce coronatâ dentibus quinque carnosis, laciniis interjectis.

E China in hortum botanicum introduxit dom. J. Reeves, anno 1820. Floret apud nos Decembre. An *G. sylvestre*, Br.?

Gymnema acuminatum, Wall. Volubile, densè tomentosum; foliis ovatis, acuminatis, suprà glabris: umbellis axillaribus, subgeminatis, petiolos æquantibus; corollis rotatis, fauce subulato-dentatis.

Asclepias acuminata, Roxb. Cat. Hort. Beng. p. 21.

Habitat in Chittagong.

DACTYLICAPNOS, *Wall.*

Petala quatuor, decidua, cruciata : duo exteriora sessilia, basi æqualiter calcarata, interiora unguiculata. ***Stamina*** quinque vel sex, in phalanges duas coalita. ***Bacca*** cylindrico-oblonga, polysperma.

Herba glabra, glauca, caule ramisque filiformibus, tortilibus, ope petiolorum cirrhosorum scandentibus. ***Folia*** bi- aut triternata. ***Racemi*** axillares vel oppositifolii, longè pedunculati. ***Fructus*** carnosus, indehiscens.

Classis Linnæana : Diadelphia.

Ordo naturalis : ***Fumariaceæ.***

DACTYLICAPNOS THALICTRIFOLIA, *Wall.* TAB. 39.

Legi in monte Sheopore floribus fructibusque maturis Augusto. E Noakote etiam habui, Maio florentem.

Radicis indolem ignoro. ***Caulis*** bi- tripedalis, gracillimus, teres, uti tota planta glaber, glaucescens, valdè tortus, apice nunc cirrhosus. ***Rami*** filiformes, alterni, semel bisve divisi. ***Folia*** alterna, subdistantia, patentissima, petiolata, bi- vel triternata, nunc geminato-biternata. ***Petioli*** filiformes, teretes, variè torti ; primarius infra divisionem semipollicaris vel pollicaris, interdum abiens in cirrhum capillaceum, dichotomè ramosum, bi-pollicarem ; ***partiales*** longiores, quandoque inæquales, alteruter nunc cirrhosus. ***Foliola*** ovata, acuta, integerrima, basi cuneato-acuta, vel obtusa, membranacea, pollicaria aut infrà, suprà nitidula, subtus valdè glauca, ad basin quinquenervia, extrorsum multinervia, propter nervos bifurcatos, capillaceos, parallelos, ad apicem usque excurrentes ; petiolulo unguiculari, nunc subtus cirrhoso insidentia. ***Racemi*** pedunculati, axillares vel oppositifolii, interdum terminales ramorum caulisve, solitarii, nudi, folia longitudini subæquantes vel iisdem parum longiores, ***floribus*** (fig. 1.) circiter quinque, magnis, oblongis, compressiusculis, nutantibus, luteis, ore rufescentibus, pollicaribus, fragrantibus, basi dilatatâ bicoruutis, pedunculatis, subfasciculatis. ***Pedunculi*** filiformes ; ***pedicelli*** unguiculares, basi suffulti ***bracteolâ*** lineari, acutâ ; fructigeri pollicares, subclavati. ***Calyx*** diphyllus : ***sepala*** (fig. 2.) minuta, ovata, acuta, basi subcordata, sub lente minutim denticulata, glaberrima, caduca. ***Petala*** valdè caduca : ***exteriora*** (fig. 3. 4.) oblonga, canaliculato-plicata, sessilia, apice acuta, cucullata, leviter patula, marginibus valvatim parallela, basi producta in calcar obtusum, leviter incurvum, tres lineas longum. ***Interiora*** (fig. 5. 6.) exteriora longitudine æquantia, iisdem verò multò augustiora, unguiculata ; ***lamina*** ovata, sagittata, dorso convexo carinata, apice productiore obtusâ oppositæ accreta, demum libera, marginibus versus basin bilobis, faucem corollæ lateraliter claudens ; ***unguis*** longus, capillaceus. ***Filamenta*** counata in phalanges duas (fig. 3. 4.) complanatas, petalorum medio, ad marginem ostii calcaris intus adfixas, apice libera, subulata, ***antheris*** quinque vel sex, distinctis, ovatis, minutis, cucullis petalorum inclusis. ***Pistillum*** (fig. 2.) longitudine staminum. ***Ovarium*** (fig. 7.) oblongum, lævc, uniloculare ; ***ovula*** plurima, placentis duabus parietalibus, longitudinalibus, oppositis, incerta. ***Stylus*** capillaceus. ***Stigma*** majusculum, planum, quadratum, marginibus semilunaribus, angulis porrectis. ***Bacca*** (fig. 8. 9.) carnosa, mollis, dilutè violacea, intus aqueo-pallida, oblonga, cylindrica, attenuata, acuta, stylo coronata, ferè pollicaris, basi nuda leviter retusa, uniocularis. ***Semina*** (fig. 11.) valdè numerosa, atra, subreniformia, complanata, punctulis notata minutissimis, seriatis, ad hilum instructa carunculo brevi, carnoso, arilliformi, inserta ***placentis*** (fig. 10.) duabus oppositis, parietalibus, oblongis, verrucosis, totam cavitatem replentia.

Observation.

I have thought it right to separate this very pretty plant from *Dicltra* and *Adlumia*, and to form it into a distinct genus, approaching to them by its flowers, but differing from all the *Fumariaceæ* by its fleshy, indehiscent fruit. In habit it agrees most with the last mentioned, and with *Cysticapnos*. I have denominated it from the figure of its fleshy, oblong, subcylindric berries.

CORYDALIS CHAEROPHYLLA, *De Cand.* TAB. 40.

Erecta, glauca, radice fibrosa, caule anguloso, foliis tripinnatifidis, foliolis inciso-lobatis; floribus densè racemosis; bracteolis ovatis, infimis serrulatis et pedicellum ferè æquantibus; siliquis clavatis, pedicello longioribus.

Corydalis chaerophylla, De Cand. prodr. i. 123.

Legi in montis Sheopore sylvis florentem Junio, fructigeram Julio.

Herba erecta, gracilis, subcarnosa, pallida, glaucescens, lævis, bipedalis et ultrà. *Radix* longa, attenuata, majuscula, fibrillis aliquot capillaribus munita. *Caulis* obtusè et inæqualiter angulatus et sulcatus, pennam anserinam crassus, basi integerrimus, supernè divisus in *ramos* subsimplices, alternos, longiusculos, graciles. *Folia* remota, alterna, triangulari-ovata, radicalia longè petiolata, caulina brevè petiolata vel sessilia, tripinnatifida, palmaria vel infrà; *pinnæ* oppositæ, quadri- vel quinquejugæ, oblongæ, inferiores petiolatæ, exteriores sessiles et marginulâ angustâ, attenuatâ decurrentes; *pinnulæ* bipollicares, adnatæ; *lobi* lanceolati, utrinque inciso-lobati, subtus valdè glauci, lobulis acutis. Petioli graciles, sulcati, basi dilatati: *partiales* inferiores interdum remotæ, ita ut folium ternato-bipinnatifidum reddatur. Pinnæ et pinnulæ exteriores confluentes in acumen attenuatum, pinnatifido-lobatum. *Racemi* terminales, subpedunculati, graciles, teretes, valdè attenuati, densiflori, tripollicares. *Flores* (fig. 1. 2.) numerosi et approximati, pallidè lutei, inodori, unguem circiter longi. *Pedicelli* capillares, trilineares, *bracteolis* ovatis duplo longiores, infimas vero remotiusculas, utrinque serrulatas subæquantes. *Calyx* (fig. 3.) minutus, sepalis subreniformibus, dentatis. *Corollæ calcar* descendens, attenuatum, limbum æquans. *Filamenta* (fig. 3.) basi dilatata, apice trianthera. *Stigma* planum, tridentatum. *Siliqua* (fig. 4. 5.) clavata, turgida, nutans, lævis, unguicularis, deorsum attenuata in pedicellum quadruplo breviorem, vertice dilatatâ acutiusculâ coronata stylo capillaceo, bilineari. *Semina* septem vel octo, reniformia, atra, lucida, ad hilum miantim arillata.

Observation.

This plant varies in stature from one to three feet. All its green parts are glaucous, especially the under side of the leaves. The bractes, particularly the lower ones, are furnished with a few toothlets. The fruit is club-shaped, about half an inch long, terminated by the persistent, naked style, and turgid with many black, shining, reniform seeds.

CORYDALIS MEIFOLIA, *Wall.* TAB. 41.

Erecta; radice longâ, subfusiformi: foliis supradecompositis, segmentis capillaceis; floribus terminalibus, laxè racemosis, longè pedunculatis; bracteis decompositis, setaceis; siliquâ pedunculo pluries breviore.

Creseit in alpibus Gossain Than, floret Augusto.

Herba pedalis, lævis, carnosa, erecta. *Radix* valdè crassa et longa, subfusiformis, sæpius divisa in ramos plures, collo pollicem et ultra diametro emetiente. *Caules*

plures, cespitosi, striati, erecti, teretes, basi simplices nudique, petiolis interspersi emarcidis foliorum radicalium; supernè divisi in ramulos plures, simplices, approximatos, paniculatos. *Folia* alterna, circumscriptione oblonga, supradecomposita, glaberrima; *pinnæ* alternantes, inferiores remotiusculæ; *segmenta* ultima capillaceo-setacea, teretia, trilinearia ad unguicularia. *Radicalia* plura palmaria, petiolos sulcatos, basi dilatatos æquantia; *caulina* brevius petiolata; summa subsessilia. *Racemi* terminales, breves, laxiusculi, ovati, obtusi, sessiles, bipollicares, basi foliosi, supernè *bracteis* instructi (fig. 2.) foliaceis, setaceo-decompositis. *Flores* (fig. 1. 3.) magni, flavi, longè pedunculati, nutantes; inferiores ex axillis foliorum supremorum, pedunculis instructi bipollicaribus; superiores pedunculis pollicaribus suffulti. *Sepala* reniformia, laciniato denticulata. *Limbus* clausus, purpureus; *galea* carinâ dorsali latâ, per dimidium calcaris conici, obtusi decurrente; *petala lateralia* carinâ dorsali angustiore. *Filamenta* basi dilatata, apice subulata, bi- vel triantherifera. *Stigma quadratum*, subsagittatum, margine inferiore concavo, nervo intermedio conspicuo, utrinque diviso in ramos duos, parallelos, arcuatos. *Siliqua* (fig. 4.) cuneata, compressa, longè-pedunculata, stylo coronata, tetra- ad hexasperma. *Semina* atra, lucida.

Observation.

It is impossible to confound this remarkable species with any other. The leaves are many times subdivided, and resemble at first sight those of *Meum athamanticum;* but their ultimate segments are distinct, and not verticillate, as in that plant, and almost setaceous. The flowers are large and beautiful, of a yellow color, with purple summits, resembling those of *Corydalis nobilis*, but without its delicious fragrance, on long peduncles, the lowermost axillary from the terminal leaves, the rest supported by decompound, large and foliaceous bractes; the whole forming a broad, ovate, somewhat loose raceme, which terminates the stem and branches.

CORYDALIS LONGIPES, *De Cand.* TAB. 42, *fig. sinistra.*

Radice ramosâ; caule procumbente, vel erecto, gracillimo; foliis tri-ternatis, lobis obovatis, subincisis, obtusis; bracteis inferioribus incisis; siliquis lineari-cuneatis, pedunculos subæquantibus.

Fumaria bulbosa, Thunb. jap. 277 (haud Linnoi)?

Corydalis decumbens, Pers. Enchirid. ii. p. 269?

Corydalis longipes, De Cand. prodr. i. 128.

Legi in Sheopore versus cacumen; etiam habui e Gossain Than et e Kamaon. Floret Julio.

Radix gracilis, perpendicularis, ramosa. *Caulis* leviter angulosus, tenuis, diffusè ramosus, basi procumbens, inde erectus, pedalis, nunc elongatus bipedalis, uti tota planta glaucescens, pallidus, lævis. *Folia* triternata, segmentis longius petiolatis; *lobis* obovatis, obtusis cum cuspidula, bilobis vel integris, deorsum attenuatis, unguicularibus vel pollicaribus; *radicalia* longius petiolata; *petioli* omnes teneres, graciles. *Racemi* terminales, pollicares, post florationem parum elongati. *Flores* (fig. 1. 2.) secundi, flavi, pedicellis *bracteas* lanceolatas, inferiores subincisas excedentibus. *Sepala* reniformia, ciliato-fimbriata. *Siliquæ* (fig. 3.) lineari-cuneatæ, compressæ, stylo brevi terminatæ, nutantes, unguiculares, pedicellos æquantes, nunc distinctius cuneatæ iisdem parum breviores. *Semina* plura, minuta, atra, lucida.

Observation.

I have slightly modified the diagnosis of this plant, and of *C. chærophylla*, given by Professor De Candolle, in his admirable prodromus systematis naturalis regni vegetabilis. In the present species, the capsule varies from linear-cuneate, to almost obovate-cuneate, sometimes equalling the pedicels, at others shorter than these. The

bractes towards the lower part of the raceme, where the flowers are remote, differ from the rest in being lobed. The plant comes certainly near to *C. sibirica* (Gmelin, flor. sibir. 4. 65. t. 33.) as has been justly remarked by the above-mentioned author. I am not quite certain if the specimens which I have received from Kamaon, and which were gathered by Mr. Robert Blinkwork, do not belong to a distinct species. I have quoted, with much hesitation, *Corydalis decumbens*, which is *Thunberg's* (not Linneus's) *Fumaria bulbosa*, not having seen the novi commentarii acad. imper. Petropolitanæ, vol. 12, in which there is a description and figure of the plant.

CORYDALIS JUNCEA, *Wall.* TAB. 42, *fig. dextra.*

Radice . . . ; caule erecto, simplicissimo, integerrimo, di- triphyllo; foliis lineari-lanceolatis, integerrimis; racemo elongato; siliquis pedunculum subæquantibus.

Incolit rupes ad Gossain Than Himaleyæ. Floret et fructus producit Augusto.

Radicem haud observare licuit. *Caulis* (scapus?) simplicissimus, erectus, teres, striatus, basi pennam anserinam vix crassus, sursum attenuatus, pedalis, bi- usque ad tripedalis, inanis, uti cœteræ partes lævis. *Folia* (an *bracteæ* censenda? *radicalia* nulla observavi;) remotissima, sæpius duo, vix nunquam ultra tria, lineari-lanceolata, acuta, basi attenuata, sessilia, integerrima, lineata, ad lucem visa nervis pluribus, capillaribus, parallelis instructa, pollicaria, sesquipollicaria, plana, erecto-patentia. *Racemus* terminalis, erectus, cylindricus, attenuatus, multiflorus, spithamæus vel dodrantalis, *floribus* (fig. 1. 2.) flavis, fauce purpureis, nutantibus, undique sparsis, superioribus approximatis, inferioribus sensim remotioribus. *Pedunculi* unguiculares, *bracteis* lineari-lanceolatis tertiò longiores, fructiferi $\frac{2}{3}$-pollicares. *Calcar* cylindricum, obtusum. *Siliqua* (fig. 3.) deflexa, oblonga, compressa, tetra- ad pentasperma, semipollicaris, pedunculum subæquans, coronata stylo persistente. *Semina* atra, nitida.

Observation.

A very remarkable and distinct species. I have not seen the root of it; nor have I observed any radical leaves among the numerous specimens, which were brought to me from Gossain Than, while I was in Nipal. I am therefore unable to decide whether to attribute a stem or scapus to the plant. The flowers are middling sized, crowded at the top of the raceme, but becoming remote downwards.

Besides the plants of this family, which I have described above, I possess three others, which are natives of India. I here subjoin some remarks on them.

Corydalis diphylla, Wall. Radice . . . Caule brevi, simplicissimo, vel ramulo unico axillari instructo, mediò bifolio: foliis oppositis, petiolatis, triternatis, segmentis cuneatis, obtusis, inciso-bilobis vel integris; bracteis lineari-oblongis, cuspidatis, majusculis, pedicellum floriferum superantibus, fructiferum æquantibus.

I have not seen the root or radical leaves of this little plant, which is about eight inches high, and grows on the mountains about Serinagur, whence Mr. Blinkworth sent me many specimens. The stem is very slender, scarcely thicker than a crow quill, rarely sending forth a short, raceme-bearing branch, which is furnished with a pair of less compound leaves. Petiols two, opposite, spreading; thrice three-sected, slender; partial ones equal, about an inch and a half or two inches long; the exterior divisions extremely short, or entirely wanting, so that the leaflets appear more or less sessile. *Leaflets* cuneate, obtuse, glaucous, tapering downwards, half an inch to eight lines long, entire, or furnished with a lateral, oblong lobe. *Flowers* slender, yellowish, an inch long, pointing to one side, from six to ten, forming an oblong

raceme, an inch in length, but afterwards gradually increasing to twice or thrice that dimension, supported by the slender continuation of the stem. *Bractes* linear, oblong, cuspidate, striated, their base embracing the rachis; at first about three lines long, exceeding the peduncles; afterward considerably increasing, until they become half an inch or more in length, under the fruit-bearing, filiform *peduncles*, which they nearly equal. *Sepals* cristate. *Petals* purple at their upper end; *lamina* of the lower one rounded; mouth slightly open. *Spur* transversal, slender, tapering. *Siliqua* compressed, linear, acute at both ends, crowned, deflexed; I have not seen it in its ripe state. It has much resemblance to, and probably belongs to the same section with *C. verticillaris*, and *oppositifolia*, De Cand. Syst. nat. ii. p. 114.

Corydalis Govèniana, Wall. Radice . . . Foliis omnibus petiolatis, oblongis, bipinnatis; pinnis cuneatis, profundè pinnatifidis, lineari-oblongis, obtusis cum cuspidula, integris vel bilobis; racemis laxis, secundis; bracteis cuneiformibus, inciso-lobatis, pedunculos superantibus, supremis lanceolatis, integris.

A specimen of this beautiful plant was communicated to me in 1819, by Dr. Govan, who had found it on the mountains of Gurwal. It seems to be intermediate between *Corydalis nobilis* and *bracteata*. The *radical leaf* measures about a span in length, including its petiol, and is of an oblong contour, with about five pairs of opposite *pinnæ*, each an inch and a half, or two inches long, the lower three short-petioled, the rest sessile. *Leaflets* alternate, an inch long, cuneate, deeply divided into three to five linear-oblong, entire or two-cleft lobes, obtuse, with a short point. *Stem* seemingly simple, slender, with a pair of long-petioled, pinnate leaves, which are three or four inches long, with leaflets resembling those described above. In one specimen, the cauline leaves are opposite; in another, alternate and remote. *Racemi* rounded or oblong, with unilateral, crowded, yellow *flowers* entirely resembling those of *C. nobilis*. All the *bractes*, except the uppermost, are foliaceous, subimbricate, cuneate at the base, divided at the end into three to five linear, acuminate lobes; they are as far as an inch long, and exceed considerably the peduncles: those at the apex of the raceme are lanceolate and entire. *Calycine leaflets* reniform, laciniato-dentate. Calcar long, transversal. Fruit not seen.

Fumaria parviflora, Lam. This is the only genuine East Indian species of the genus, which I am acquainted with. I have found it a very common and tedious weed in vegetable gardens throughout Hindustan, where it blossoms and bears fruit in the cold weather, and the beginning of the hot season. It is also found in similar situations in the great valley of Nipal, and at Noakote. The plant is very branchy, fleshy and glaucous, with angular *stem*, and much subdivided *leaves*; the ultimate segments are linear, channeled. *Flowers* pale pink, with green and purple summit. *Sepals* fimbriato-dentate. *Capsule* round, with scarcely any terminal point, supported by a thick, fleshy *peduncle*, which is longer than the bracte. Among the late Dr. Heyne's collection, there are some specimens labelled "*Fumaria officinalis*, 28*th November* 1816," which, as far as regards the leaflets, certainly resemble that species more than *parviflora*; they are broadish, oblong-cuneate, with oblong segments; but the capsule is globular, and not emarginate.

In Bengalee, this plant is called *Bun-Sulpha*; in Hindustanee *Sulpha-saug*. It possesses a bitterish taste. Dr. Whitelaw Ainslie speaks of it in his valuable *Materia Medica of Hindustan*, p. 16, under the name of *Fumaria officinalis*, being in use among the Mahomedans as a diuretic, as employed in maniacal cases, and as a diobstruent. He says it is called *Pitpapra* in Hindustanee, *Shoutra* in Persian and Dukhanee, and *Bucklutulmélic* in Arabic.

PODOCARPUS MACROPHYLLA, *Wall.* TAB. 43.

Foliis undique sparsis, lineari-sublanceolatis, acutis; amentis masculis elongatis, cylindricis; fructu globoso, suffulto receptaculo magno, supernè trilobo, basi bibracteato.

Lignum Emanum, Rumph. Amb. iii. p. 47. t. 26.

Sin, vulgo *Máki*, seu *Fon Máki*, i. e. *Máki* legitima (*Ksaé Máki*) Kæmpf. Amœn. exot. 780 (fide Thunberg.)

Taxus macrophylla, Thunb. Japon. 276. Banks Icon. Kæmpf. p. 2. t. 21.

In Amboina primum detexit Everardus Rumphius; in Japonia Engelbertus Kæmpfer; China, Guil. Kerr (teste Hort. Kewensi.) Ipse reperi in convalle Napaliæ magna, ad Sanko, florentem Martio et Aprili, fructigeram Julio; et ad litora insulæ Singapore floribus fructibusque onustam Octobre. E montibus Pundooa, Sylhet vicinis, misit Francis DeSilva.

Nomen Newarrense *Goonsee*.

Arbor magna, sempervirens, pedes quadraginta ad quinquaginta alta, trunco recto, glabro, pedem, ad pedem et dimidiam crasso. *Rami* patentes, subverticillati, uti omnes partes læves, fuscescentes; juniores lætè virides, parum angulosi, e lapsu foliorum tuberculato-cicatrisati. *Folia* valdè approximata, undique sparsa, vix subbifariè patentia, linearia, vel angustissimè lanceolata, attenuato-acuta, lineas quatuor ad quinque lata, basi acuta, plana, coriacea, suprà atro-viridia, nitidula, plicatula, juxtà longitudinem leviter convexa, costâ gracili, elevata, marginibus parallelis, convexiusculis, integerrimis; subtus pallida et opaca, glaucescentia, avenia, enervia, costâ latiusculâ, subsulcata; interdum subverticalia, rarò parum falcata; tenella lætissimè virentia, parum flavicantia, nunc undulata. *Petioli* brevissimi, vix ultra lineas duas emetientes, suprà convexi, a basi folii subdecurrente obseletè marginulati, nunc parum torti. *Flores* dioici. *Amenta mascula* (fig. 1.) cylindrico-oblonga, pennam cygneam crassa, pollicem ad duos longa, obtusa, recta, pallidè lutea, sessilia, basi suffulta *squamis gemmaceis* pluribus, persistentibus, patentibus, imbricantibus, ovatis, acutis, concaviusculis, dorso subcarinatis, nervo elevato, interdum infra apicem, nunc obtusam, in cuspidulam excurrente, bilinearibus. *Antheræ* (fig. 2. 3.) numerosissimæ, approximatæ, patentiusculæ, parvæ, nudæ, receptaculo cylindrico, gracili insertæ, sessiles, obovatæ, cuspidulâ terminatæ, biloculares, loculis versus parietem inferiorem longitudinaliter dehiscentibus. *Flores fœminei* (fig. 4.) solitarii, axillares, brevè pedicellati, nudi. *Ovarium* ovato-rotundum, læve, magnitudine seminis sinapeos, insidens *receptaculo proprio*, pedicelli floris continuo, eoque triplo ferè longiore et crassiore, viridi, cylindraceo, apice obliquâ retuso et inæqualiter trilobato, basi bibracteato: *bracteolis* oppositis, linearibus, acutis, patulis, persistentibus, receptaculo dimidio brevioribus. *Stylus* nullus. *Stigma* obsoletum, obliquum. *Pericarpium* (fig. 5. 8. 9. 10.) *nux?* obovato-globosum, magnitudine grassulariæ, læve, viride, glaucum vertice obliquè apiculatum, basi acutiusculâ foveæ terminali receptaculi lateraliter insertum, uniloculare, monospermum, evalve et indehiscens. *Receptaculum* (fig. 6. 7. 9.) carnosum, molle, læve, atropurpureum, pruinosum, oblongo-cylindricum, semipollicare, a lobis apicis subdecurrentibus leviter sulcatum, nuce duplo ferè longius, basi retusâ suffultum bracteis istis duabus, apice concavâ divisum in lobos tres inæquales, crassos, brevissimos, nunc acutiusculos. *Integumentum exterius* crassum, coriaceum, versus superficiem interiorem subcarnosum parumque porosum; *interius* tenuissimum, membranaceum, perispermo arctè adhærens. *Perispermum* totam pericarpii cavitatem replens, carnosum, album. *Embryo* (fig. 11.) cylindricus, albus, obliquè adscendens in cavitate propriâ, dimidiam inferiorem partem axis perispermi occupante. *Cotyledones* duæ ovatæ, obtusæ, dorso convexæ, intus planæ; *plumula* minuta, obtusa, cotyledonum basibus obtecta; *radicula* infera, acutiuscula, parvâ e basi perispermi distantiâ remota.

totam pericarpii cavitatem replens, carnosum, album. *Embryo* (fig. II.) cylindricus, albus, obliquè adscendens, cavitate propriâ, dimidiam inferiorem partem axis perispermi occupante receptus. *Cotyledones* duæ, ovatæ, obtusæ, convexæ, intus planæ; *plumula* minuta, obtusa, cotyledonum basibus obtecta; *radicula* infera, acutiuscula, brevi e basi perispermi distantiâ remota.

Observation.

I can discover no specific difference between the trees of the authors quoted above, or between them and those of Sylhet, Nepal, and Singapore. The species may therefore be considered as having an extraordinary extent of geographical distribution. In regard to the genus to which I have referred the tree, I should have entertained no doubt whatever, if M. Mirbel had not attributed an *inversed* embryo to *Podocarpus asplenifolia* of Labellardiere, in an interesting memoir connected with the subject of the structure of seeds, inserted in the 16th vol. of Annales du museum d'histoire naturelle, (p. 456. t. 6.) The same acute observer represents the embryo inverse in *Taxus baccata* (loc. cit. tab. 4;) while Gærtner describes it as being erect (Carp. 2. p. 66.) which it undoubtedly also is in *Taxus* (my *Podocarpus*) *macrophylla*. The general habit, male inflorescence and leaves of Kæmpfer's *Nagi*, Amœn. exot. p. 773. t. 774. are much like those of our tree, but its leaves are considerably broader. Thunberg, in his Flora japonica, calls it *Myrica Nagi*, and Gærtner makes a new genus of it, under the name of *Nageia*, carpol. 1. p. 191. t. 39, from which Roxburgh's *Nageia Putranjiva*, hort. beng. 71. is certainly generically different. I shall have occasion to revert to this subject a few pages further on, in my observation on *Myrica sapida*.

The wood of our tree is of a greyish white color, resembling in its structure common deal, and employed, as I was told by some Chinese inhabitants at Singapore, in the construction of boats, being light and durable. In Nepal, no use is made of it; but the natives of that country eat the fleshy and juicy receptacles of the fruit, which have a slightly resinous taste, but are otherwise very insipid. The fruit itself is not eatable.

I have retained the specific name *macrophylla*, from an aversion to multiplying names, but I believe that *Podocarpus asplenifolia* has much larger leaves.

Taxus chinensis, Roxb. hort. beng. 73, is, I strongly suspect, *T. verticillata*, Thunb. jap. 276, of which Sir J. E. Smith very justly remarks, in Rees's Cyclopedia, that Kæmpfer's description (*Ken sin, item Sen bakv, vulgo Inu máki*, i. e. *Máki spuria*, amœn. exot. 780,) points at its close resemblance to *T. macrophylla* and *spinulosa*; suggesting at the same time, that all three might be detached under a separate genus, distinguished by the structure of the anthers and the fruit. Its habit and leaves are certainly very like those of *Podocarpus macrophylla*. Both grow very freely in the Honorable Company's botanic garden at Calcutta; the former introduced from Nepal and Sylhet, the latter from China. They are easily propagated by cuttings. None of them has as yet blossomed.

TAXUS NUCIFERA, *Kæmpf.?* TAB. 44.

Foliis solitariis, linearibus, remotis, Thunb. japon. 275.

Fi, vulgo *Kaja*, *Taxus nucifera*, Kæmpf. amœn. exot. p. 814. t. 815?

Taxus nucifera, Linn. spec. plant. 2, p. 1472? Gærtn. carp. 2. p. 66. t. 91?

In Japonia detexit E. Kæmpfer. China, (Hort. Kewens.) Montes tibetanæ, W. S. Webb. Sirinuggur, Kamroop et R. Blinkworth. Ipse legi in monte Sheopore, versus apicem, florentem Martio.

Nomen Newar. *Loosoah*.

Arbor magna, pyramidalis, cortice fusco, lævi, ramis patentibus, gracilibus, laxiusculis, fuscis, tuberculatis, subdistichè ramulosis. ***Folia*** approximata, patentia, falcata, verticalia, bifaria, alterna, linearia, uninervia, cuspidato-acuta, pollicaria, suprà atroviridia, lucida, subtus glauca. ***Petioli*** planiusculi, vix sesquilineam longi, basi utrinque lineolâ per ramum decurrentes. ***Amenta mascula*** (fig. 1. 2.) copiosissima, axillaria, solitaria, foliis quadruplò breviora, ovata, brevissimè pedicellata, subsecunda, faciem ramuli inferiorem spectantia, basi circumdata ***bracteolis*** pluribus, imbricantibus, valdè inæqualibus, obtusissimis, lævibus, interioribus obovatis, subrotundisque, patentiusculis, calyculum majusculum formantibus, exterioribus sensim minoribus, perpedicellum brevissimum sparsis. ***Columna*** (fig. 3.) ***filamentorum*** brevis, teres, flava, carnosa, bractearum calyculo vix longior, apice leviter incrassatâ divisa in filamentula brevissima, capillacea, distincta. ***Antheræ*** (fig. 4.) pallidissimè flavicantes, peltatæ, quadri- vel quinquelobæ, lobis patentibus, obtusis, subtus dehiscentes, approximatæ in capitulum supra calyculum parumper elevatum. ***Flores fœminei*** haud visi. ***Nux immatura*** (fig. 5.) in distincta arbore, axillaris, solitaria, subrotunda, apiculata, lævis, nitida, magnitudine seminis coriandri, fere occulta ***calyculo***, (fig. 6.) multibracteato, pedicellato.

Observation.

This tree seems to be much like Kæmpfer's figure and description, quoted above; yet I am not certain that they belong to one and the same species. The leaves are represented as being more distant, and somewhat broader than those of our tree; but this may be an accidental circumstance. I have not seen the ripe fruit; but its unripe state clearly points at a nut, supported by a subtruncate calycle of numerous bractes. The wood is light, compact, of a brownish color.

Both Capt. W. S. Webb and Dr. Govan, have kindly supplied me with specimens, which are undoubtedly ***Taxus baccata***, without fructification, which had been gathered on the Himaleya. I possess, besides the above, other specimens, presented to me by those gentlemen, as species of ***Yew;*** but not having seen their inflorescence, I am unable to afford any useful information respecting them. My first mentioned friend sent me branches of a ***Yew***, which he gathered on the confines of Tartary: he observes, that it is berry-bearing, and that the natives call it ***Toonér***. It is certainly a new species.

Carpology of *Thunbergia coccinea*, (continued from p. 49.)

Having succeeded in causing several seeds to germinate, which ripened this season, for the first time, in the garden, I am able to add some account of their internal structure. I must, however, candidly confess, that I have not quite overcome the difficulty of determining the precise nature of the radicula, and the figure and relative position of the cotyledons. The latter appear to me to vary considerably in those respects, as well as in their size; the ventral one is, however, always the largest. Before germination, they are scarcely to be distinguished from each other by a faint and interrupted line, observable in a section of the seed; and it is only during its progress, that their margins become somewhat separable by the aid of a knife, especially towards their base, where they send off the small, flattened, longish petiols, by which they are attached to the infant plant. In every other respect, they continue firmly attached to each other, forming a seemingly uniform substance, which never rises above the ground. The seeds of ***Thunb. grandiflora***, Roxb. appear to have precisely the same structure. Those of ***Thunb. Hawtayneana***, Wall. have the back of the ventral, at least four times larger, cotyledon marked by a flat, obicular cavity, in which the dorsal cotyledon is placed. This latter is almost circular, very slightly convex on the outside; its margins truncate, and concealed within those of the cavity, in which it is received.

Th. coccinea: ***Cotyledones*** duæ, carnosæ, albæ, dispares, plano-convexæ, incumbentes, paginis internis arctè conferruminatæ, ita ut limites, nisi inceptâ germinatione,

vix ac ne vix discriminari queant, hypogaeæ ; *ventralis* majorem seminis partem efficiens, figuramque ejus determinans ; *dorsalis* quadruplo minor, mediam inferioremque partem superficei dorsalis alterius occupans, eæque subimmersa, irregulariter orbicularis, margine obtuso, nunc pro parte replicato. *Embryo* parvus, planus, oblongus ad basin dorsi seminis ; *radicula* infera, obtusa.

MYRICA SAPIDA, *Wall.* TAB. 45.

Foliis lanceolatis, acuminatis, integerrimis, deorsum valdè attenuatis, basi acutis, subtus puberulis ; amentis distinctis, axillaribus, solitariis ; masculis remotis, laxè racemosis ; fœmineis gracilibus ; putamine pubernlo, demum glabro.

Joobai, vulgò *Jamma Momu*, Kæmpf. amœn. exot. p. 798. Ejusd. icon. a Banksio edit. p. 2. t. 37.

Hab. in montosis, ad Sirinaggur, Kumaon, &c. Legi in montibus variis convallis Napaliæ, florentem Martio, fructigeram sub pluviis.

Nomen vernac. *Kaephul* ; Newarr. *Kobusi*.

Arbor umbrosa et frondosa, triginta circiter pedes alta, trunco crasso, *cortice* obtecto fusco, rimoso, scabro. *Rami* sparsi, patentes, tuberculati a vestigiis foliorum delapsorum, grysei, villosi ; tenelli angulati, subsericei. *Folia* versus extremitates ramorum valdè approximata, patentia, undique sparsa, lanceolata vel lanceolato-cuneata, acuta, vel subacuminata, deorsum attenuata, basi acuta, marginibus subrecurvis integerrima, rarissimè notata denticulo uno alterove remoto, quadri- ad sexpollicaria, chartacea, suprà lucida, lævia, vasculis nunc puberulis ; subtus pallida, tamen nitidula, sub lente punctis minutis, resinosis conspersa, costâ gracili, elevatâ nervisque capillaceis, reticulato-ramosis, versus marginem arcuatim anastomosantibus, puberulis ; primordialia subtus magis pubescentia, grossè et inæqualiter serrata, serraturis latis, cuspidatis. *Petioli* brevissimi, teretes, villosuli, tres lineas longi. *Stipulæ* nullæ. *Amenta* axillaria, vel lateralia (e vestigiis foliorum delapsorum) solitaria, erecto-patentia. *Mascula* (fig. 1.) in distincta arbore, composita, cylindracea, gracilia, obtusa, semipollicaria, usque ferè pollicaria, lineas duas crassa, racemosa, alterna, remota, sessilia. *Pedunculus communis* filiformis, rectus, gracilis, nudus, villosus, foliis dimidiò brevior, nunc eadem subæquans. *Partialis (rachis)* tenerrimus, glaber, subflexuosus. *Squamæ* (fig. 2. 3.) valdè approximatæ, cuneato-obovatæ, concavæ, obtusæ, ciliatæ, minutæ. *Stamina* (fig. 4.) quinque, longitudine squamæ. *Filamenta* lævia ; *antheræ* subrotundæ, erectæ, biloculares, utrinque longitudinaliter dehiscentes, valvulis demum divaricato-reflexis ; polline majusculo, aureo, globuloso. *Amenta fœminea* (fig. 14.) simplicia, sessilia, foliis dimidiò vel tertiò breviora, gracilia, erectiuscula. *Pedunculus* teres, rectus, villosus. *Flosculi* (fig. 5.) subdistantes, sparsi, parvuli, *bracteolis* pluribus suffulti imbricatis, ovatis, obtusis, pubescentibus, ciliatis. *Ovaria* (fig. 6. 7. 8.) duo vel tria globosa, glabra, bracteis breviora, monospora ; *ovulo* pendulo. *Styli* duo, carnosi, subulati, divaricato-patentes, scabriusculi, rufi, ovario duplò longiores, supra bracteas exserti. *Stigmata* acuta. *Drupæ* (fig. 9. 10.) magnitudine cerasi minoris, subrotundæ, sessiles, nudæ, lævcs, superficie minutum granuloso-lobulatæ, colore e rubro purpurascente, carne molli, parcâ, dilutè rubellâ. *Putamen* valdè durum et crassum, ovatum, levissimè compressum, rugosum et faveolatum, pube sericeâ, pauca, valdè solubili conspersum, suturis vix prominulis, magnitudine putaminis cerasi. *Seminis* (fig. 11.) structura exactè ut in *Myrica cerifera*, Gærtn. carpol. 1. p. 190. t. 39.

Observation.

This tree has been described by my highly respected friend Major General Hardwick, under the name of *Ka-iy-p,hul* of Gladwin's Materia Medica, in the sixth vol.

of Asiatic Researches, p. 380. In Nepal, I found it growing wild, and also cultivated in gardens. The fruit ripens in the rains, has a pleasing appearance, and a refreshing, acidulous taste. It is known there only by the name of *Kobusi*; to the westward it is called *Kaephul*. I venture to say that Kæmpfer's tree is the same as ours: his description, however, agrees better with it, than the figure which he gives of the fruit; Thunberg only refers to it among his *plantæ obscuræ*, in his flora of Japan, p. 388. Its wood is hard, of a pale brown color. The leaves, on being rubbed, have a pleasantly aromatic, though faint smell: in very young plants, they are strongly serrated, but they soon lose their serratures, and as the tree grows up, they become perfectly entire. In the Honourable Company's botanic garden at Calcutta, the trees which were introduced from Nepal since 1818, have thriven luxuriantly, but as yet have not shown any disposition to blossom.

How far Roxburgh's *Myrica integrifolia*, Hort. beng. p. 71, is the same as our species, is a question which I cannot as yet decide. I possess no specimens of it; but judging from the manuscript account, and the figure preserved at the garden, I should think they are quite distinct. I subjoin Roxburgh's description.

"*Myrica integrifolia*. Leaves lanceolar, entire, smooth; scales of the female aments reniform-cordate, one or two flowered; drupes oval, granulated.

"*Sophee*, the vernacular name in Sylhet, where it is indigenous, and grows to the size of the apple tree in Europe. Flowering time December and January, and the fruit ripens in May, when they are picked by the natives, and used as a condiment: in their raw state, though inviting to the eye, they are too sour to be relished.

"*Branchlets* very ramous; the tender shoots considerably hairy. *Leaves* permanent, alternate, approximate, round every part of the apices of the branchlets, short-petioled, lanceolar, entire, and perfectly smooth; length from three to six inches by about one broad. *Stipules* none. *Female Aments* axillary, generally solitary, cylindric, rarely more than an inch long, considerably villous, many flowered. *Scales* reniform-cordate, somewhat acuminate; the back sprinkled with small, yellow, shining grains; one or two flowered, intermixed with many small, fleshy scales, resembling a perianth. *Germs* minute, ovate, one-celled, containing a single ovulum, attached to the top of the cell. *Styles* two; or only one, two cleft. *Drupe* oval, size of a prune. *Nut* oblong, thick and very hard, a little flattened, the two edges rather extended and somewhat sharp, densely clothed with an immense quantity of fine, white hair in penicilliform tufts. *Pulp* consists of closely impacted, but distinct, clavate, succulent, yellow bodies. *Seed* ovate, oblong. Integument single, membranaceous. *Perisperm* none. *Embryo* inverse. *Cotyledons* conform to the seed, amygdaline. *Radicle* superior."

The above account was no doubt taken from dried specimens; and although allowances must be made for a somewhat altered appearance of the growing plant, still there appear points of distinction between Roxburgh's tree and ours, which hardly admit of their being united into one species. The male inflorescence, which Dr. Roxburgh has not described, is delineated in his drawing: it consists of very small and short, axillary, simple aments, twice the length only of the petiols; the female aments are also very short; the fruit is full twice as large as ours. Some of the leaves appear remotely serrate. The following specific character might perhaps be adopted. *M. integrifolia*, Roxb. foliis lanceolatis, integerrimis, lævibus, deorsum attenuatis; amentis distinctis, axillaribus, solitariis, simplicibus, brevissimis, flosculis approximatis; putamine barbato.

From the late Mr. W. Jack, I received in 1821, the outline of a female branch of a third species, under the name of "*Bua Lumbey;* Myrica? an sapida Wall. (Kæphul)?" I found the tree in the forests of Singapore, covered with flowers, in October 1822. From these sources I am able to give the following specific character and description of the tree, which I call *Myrica Farquhariana*. Foliis enneato-lanceolatis, inte-

gerrimis vel acutè serrulatis, lævibus, deorsum acuminatis, basi subobtusis: amentis distinctis, axillaribus, solitariis; masculis densè racemoso-subpaniculatis, sessilibus: fœmineis elongatis, erectis.

Arbor 12 pedalis, ramosissima. *Rami* rugosi, grysei: *ramuli* valdè approximati; *tenelli* puberuli. *Folia* ad apicem ramulorum admodum copiosa et approximata, sparsa, patentia, lanceolata, brevè acuminata, vel oblongo-lanceolata, in fœminea arbore (an semper!) cuneato-lanceolata, obtusa: deorsum attenuata, basi acuta vel obtusa, nunc retusa, margine leviter recurvo integerrima vel remotissimè et acutè serrulata, tri- usque ad sex-pollicaria, utrinque lævia, suprà lucida, subtus (ut in *M. sapida*) nervoso-venulosa, minutim resinoso-punctulata. *Petioli* brevissimi, pubescentes. *Amenta* axillaria, solitaria, distincta. *Mascula* brevissima, approximata, disposita in racemis axillaribus, admodum copiosis, basi subcompositis, sessilibus, foliis dimidiò brevioribus. *Pedunculus communis* pubescens. *Squamæ* et *stamina* ut in illa specie. *Amenta fœminea* (ex icone a beato Guliehmo Jack communicata) gracilia, teretia, erecta, foliis tertiò breviora vel eadem subæquantia.

I believe this tree will be found entirely different from *M. sapida*. I saw only a few female aments, and those quite withered and decayed, at Singapore. My dear friend Jack's drawing was, if I mistake not, copied from one in the possession of Colonel Farquhar, the late worthy Resident at Malacca and Singapore, who probably found the tree about the first mentioned place, and to whom I have dedicated it.

I had occasion above (under *Podocarpus macrophylla*, p. 57) to allude to Roxburgh's *Nageia Putranjira*. This tree differs so much in habit from Gærtner's *Nageia japonica*, which is Kæmpfer's *Nagi*, that I suspect they are not congeneres. Roxburgh gives the following character of the genus, which he places in Diœcia triandria, in his manuscript Flora Indica. "*Nageia*: Male, calyx four-or five-leaved; corol none. Female, calyx three-to five-leaved; corol none; germ superior, three-celled, cells two-seeded, attachment of the ovulum superior; styles two or three; drupe one-seeded, embryo inverse, and furnished with a perisperm." He very properly observes that, with regard to the structure of its fruit, the tree is nearly allied to Gærtner's genus. I would suggest the generic name *Putranjiva*, derived from a legitimate Sanerita origin, for the tree in question, calling it *Putranjiva Roxburghii*, after its first describer. Forskael's *Buxus dioica*, which is Vahl's *Myrica montana*, Symb. bot. 2. p. 99. has, according to this author and Sir J. E. Smith, (in Rees's Cyclopædia,) a strong affinity to *Nagi*; and Willdenow has placed it under *Nageia*, in his edition of Spec. plant 4. p. 749. I am inclined to think it ought to be joined to *Putranjiva*, unles sthe original name *Buxus* was meant to indicate the peculiar *Ruscuslike* stucture of the leaves of Kæmpfer's tree, in which case is ought probably to be placed with the latter.

TRICYRTIS, *Wall.*

Perianthium inferum, subcampanulatum, hexaphyllum; *foliola exteriora tria* basi gibboso-saccata. *Stamina* longitudine perianthii, ejusdemque basi inserta. *Antheræ* anticæ, nutantes. *Stylus* divaricato-trilobus. *Stigmata* sex, uncinata. *Capsula* prismatica, trilocularis, polysperma, apice dehiscens. *Semina* plana.

Classis Linneana. *Hexandria monogynia.*

Ordo naturalis. *Lilia*, Juss.

Habitus: Planta gracilis, erecta, caule subsimplici, foliis cordatis, sessilibus, amplexicaulibus. *Flores* terminales, pauci, pulchri, basi gibberibus tribus, prominentibus notati (unde nomen.)

TRICYRTIS PILOSA, *Wall.* TAB. 46.

Uvularia hirta, Thunb. japon. p. 136 ?

Legi in montibus Sheopore et Chandagiry, florentem Junio et Julio, fructigeram Septembre.

Herba erecta, bi- tri- ad quadripedalis, villis obsita longis, sparsis, distinctis, hyalinis, mollissimis. ***Radix*** brevis, emittens fibras plures filiformes, teretes, pallidas. ***Caulis***, nunc duo tresve, teretes, crassitie culmi avenacei, graciles, attenuati, nunc apice ramulos emittentes paucos, simplices, brevissimos, leviter inter folia flexuosi, pilosi, basi purpurescentes, omnino evaginati. ***Folia*** alterna, sessilia, erecto-patentia, membranacea, ovato-cordata, amplexicaulia, attenuata in acumen longum, subtrinervium, leviter undulato-repanda, integerrima, plana, quadri- ad sexpollicaria, sinu baseos profundo, sæpius angusto, lobis ovatis, obtusissimis, ferè semipollicaribus, utrinque mollissima propter pilos sparsos, sericeos, patentes ; suprà pallidè viridia, juxta nervos sulcata, subtus albescentia, novem-nervia, costâ gracili, nervos alternos, tenuissimos, admodum obliquos emittente; media caulis majora; caulium novellorum ovato-lanceolata, basi simplici, angustatâ adnata ; ***floralia*** lanceolato-cordata, parva. ***Panicula*** terminalis, pauciflora, palmam longa, subdichotomè ramulosa, foliolosa, pilosa. ***Pedunculi*** teretes, graciles, sesquipollicares, inferiores foliolo florali, superiores bracteâ lanceolatâ, unguiculari suffulti, multiflori, inarticulati, apice vix incrassati. ***Flos*** erectus, ex albo viridescens, inodorus, elegans, intus uti genitalia guttulis atropurpureis pictus, basi subtubulosus, tri-tuberculatus vel subtricalcaratus, limbo patenti, subcampanulato, parum revoluto, fere pollicari. ***Foliola*** (fig. 1. 2.) lanceolata, attenuato-acuminata, pollicaria, duplici ordine alternatim disposita : *exteriora* parum latiora et longiora, extus puberula, basi exsculpta foveâ melliferâ, extus in tuberculum calcariforme protrudente, sesquilineam longum, truncatum, rectè divergens ; æstivatione valvata ; *interiora* basi simplicia, absque fovea vel gibbere, marginibus æstivatione parallelis, haud verò contiguis. ***Stamina*** (fig. 1.) perianthium longitudine æquantia ; ***filamenta*** teretia, carnosa, purpureo-guttata, apice recurvatâ nutantia, foliolis perianthii opposita, eorumque basi adfixa. ***Antheræ*** majusculæ, ovatæ, planæ, biloculares, utrinque longitudinaliter dehiscentes, dorso adfixæ, extrorsum nutantes, anticæ. ***Pistillum*** (fig. 1.) longitudine staminum, erectum ; ***ovarium*** (fig. 3.) oblongo-prismaticum, pallidè viride, lævе, angulis prominentibus, lateribus sulco notatis, triloculare, polysporum : ***ovula*** plurima, simplici serie axi adfixa. ***Stylus*** obscurè triangularis, divisus in lobos tres, ipso longiores, trilineares, divaricato-patentissimos, asperulos, divisos in ***stigmata*** sex, capitellato-glandulosa, carnosa, recurvato-hamulosa, acuta. ***Capsula*** (fig. 4. 5. 6) triquetro-prismatica, lævis, pallidè fuscescens, lateribus canaliculatis, sesquipollicaris, triloculars, apice trivalvis, ***valvis*** brevibus, plicatis, angustatis. ***Dissepimenta*** ex inversis valvularum marginibus constructa ***Semina*** (fig. 7. 8.) parva, densissimè imbricata, plana, atra, ovata, umbilico parvo, planiusculo notata, simplici serie axi inserta. ***Integumentum*** simplex, rugis densis, transversis, venulisque longitudinalibus paucis ornatum, laxius adhærens. ***Perispermum*** copiosum, carnosum. ***Embryo*** (fig. 9.) minutus, subulatus, in cavitate mucosa, ad extremitatem perispermi umbilico oppositam, locatus.

Observation.

This very elegant plant is intermediate between *Uvularia* and *Fritillaria*, but seems to be generically distinct from both. From the former it differs in general habit and mode of inflorescence, in the absence of sheaths of the stem, in only the three outer petals being furnished with a nectary, in the anterior direction of the anthers, the structure of the style and stigma, in the dissepiment of the capsule being formed of the inverted margins of the valves, and finally in the flat, scaly seeds. From the latter it differs in the figure of the flowers, the above-mentioned partial existence of nectaries, the direction of the anthers, the three-lobed style, bifid stigmas, and finally in its

dissepiments, which are parallel, not contrary. From *Streptopus* the genus is distinct by its fruit, which is not a berry. Thunberg's *Uvularia hirta* may perhaps be this plant, and I have accordingly quoted it as a doubtful synonymon.

CRAWFURDIA, *Wall.*

Calyx tubulosus, quinquedentatus. *Corolla* tubulosa vel campanulata, limbo quinquefido, cum vel absque lobulis accessoriis. *Filamenta* dilatata, e basi corollæ. *Antheræ* erectæ. *Discus hypogynus* quinquelobus. *Stylus* erectus. *Stigmata* duo, recurva. *Capsula* clavata, compressa, pedunculata, calyce corollâque emarcidis obtecta, unilocularis, ad basin usque bivalvis, *valvis* prope margines seminiferis. *Semina* verticalia, imbricata, membranaceo-marginata, hinc biloba.

Classis Linneana: *Pentandria monogynia*, *sectio* floribus monopetalis, inferis, fructu capsulari.

Ordo naturalis: *Gentianeæ*, Juss.

Habitus: Herbæ glaberrimæ, volubiles, ramis elongatis, gracillimis; foliis oppositis, trinerviis; floribus axillaribus, solitariis vel fasciculatis, magnis, speciosis, dilutè cæruleis.

Dixi in honorem amici dilectissimi, *Joannis Crawfurd*, armigeri, insulæ Singapore gubernatoris, propter opus suum de archipelago Malayano * benè meriti, historiæ naturalis totius, præprimis vero botanices fautoris strenui, ejusque studio addictissimi.

CRAWFURDIA FASCICULATA, *Wall.* TAB. 47.

Foliis lanceolatis; floribus subsessilibus, fasciculatis; dentibus calycinis elongatis; corollis tubulosis, limbo lacinulis accessoriis aucto.

Legi in monte Sheopore, florentem Septembre et Octobre. Etiam habui e montibus Pundua, florentem et fructigeram Decembre.

Radix fibrosa. *Caulis* teres, scandens, gracilis, uti tota planta lævis, emittens *ramos* plurimos, longos, tenerrimos, teretes, super frutices latè volubiles, tortiles, filo emporetico vix crassiores. *Folia* opposita, remotiuscula, nunc interstitia subæquantia, tri- ad quinquepollicaria, patentissima, lanceolata, e basi rotundato-acutiuscula attenuata in acumen longum; integerrima, margine membranaceo minutim crispatula, trinervia, nervis gracillimis, subtus elevatis, ad apicem usque excurrentibus, utrinque glaberrima, glaucescentia, minutim reticulata. *Petioli* semipollicares ad pollicares, sulcati, basi dilatatâ, concaviusculâ ramum margiuulo elevato amplectentes, præter quem nullum stipularum vestigium. *Flores* (fig. 1.2.) magni, pollicares, ad sesquipollicares, dilutè cærulei, tres quatuorve fasciculati, axillares, tubulosi, inodori, brevissimè pedicellati, petiolo dimidiò vel duplò longiores, patentes. *Pedunculus* teres, crassiusculus, lineas duas vel tres longus, supra basin *bracteolis* duabus tribusve lanceolatis, acutis, viridibus, ipsum longitudine æquantibus. *Calyx* (fig. 3.) cylindrico-oblongus, quinquecarinatus, ferè unguicularis, fauce subtruncata coronatâ dentibus quinque longis, compressis, erectis, distantibus, calycem ipsum longitudine æquantibus. *Corolla* (fig. 4.) unacum calyce marcescens, lævis, sub lente punctulata; *tubus* ferè pollicaris, leviter plicatus, sursum vix ampliatus; *limbus* patens, plicatus, tubo triplo brevior, quinquefidus, æstivatione imbricatus: *laciniæ* ovatæ, acutæ; *lobuli accessorii* totidem interjecti, brevissimi, obtusi: *faux* nuda, pervia. *Stamina* (fig. 4.) quinque corollâ parum breviora, erecta, inclusa, parum inæqualia: *filamenta* complanata, supra basin corollæ inserta, basi medioque dilatata, duo paullò breviora: *antheræ* erectæ, parallelæ, liberæ, oblongæ. *Ovarium* (fig. 5.) brevè pedicellatum; pedicelli basis circumdata disco brevissimo, profundè et obtusè quinque-

* History of the Indian Archipelago, in three volumes, 8vo. 1820.

lobo, carnoso, flavicante ; lineare, læve, uniloculare, pluriovulatum : *ovula* planiuscula, margine extrorsum biloho, parietibus oppositis duplici serie adfixa. *Stylus* teres, erectus, longitudine ferè ovarii. *Stigmata* duo teretia, papillosa, obtusa, recurvata. *Capsula* (fig. 6. 7.) floris tegumentis obtecta, lævis, oblonga, complanata, coronata stylo persistente, demum bipartibili, $\frac{2}{3}$-pollicaris, longè pedicellata, unilocularis, ad basin usque bivalvis. *Valvulæ* planiusculæ, intus nitidæ, trinerviæ, nervis marginalibus incrassatis. *Receptacula* foveolata, minuta, intra margines valvularum rectâ lineâ disposita. *Semina* (fig. 9. 10. 11. 12.) plana, leviter convexiuscula, orbiculata, serie simplici imbricatim coordinata, superficiebus latera capsulæ respicientibus, lævia, fusca, alâ circumdata latâ, tenuissimâ, membranaceâ, integerrimâ, ad marginem superiorem crassiorem seminis bilobâ, lobis parallelis, parum distantibus, cultriformi-convexiusculis, sinu inferiorem partem seminis proximi recipiente (fig. 8.) subequitante, ad extremitatem externam punctulo minuto umbilicato. *Integumentum* simplex, tenue, in alam istam, supernè duplicem, ultra ambitum seminis extensum. *Perispermum* carnosum, aqueo-albu n. *Embryo* (fig. 13.) minimus, in cavitate propria perispermi, umbilico proxima locatus, respectu capsulæ horizontalis. *Cotyledones* ovatæ, breves. *Radicula* infera, centrifuga.

CRAWFURDIA SPECIOSA, *Wall.* TAB. 48.

Foliis ovatis ; floribus longè pedunculatis, solitariis ; dentibus calycinis brevibus ; corollis campanulatis, limbo quinquelobo, sinubus nudis.

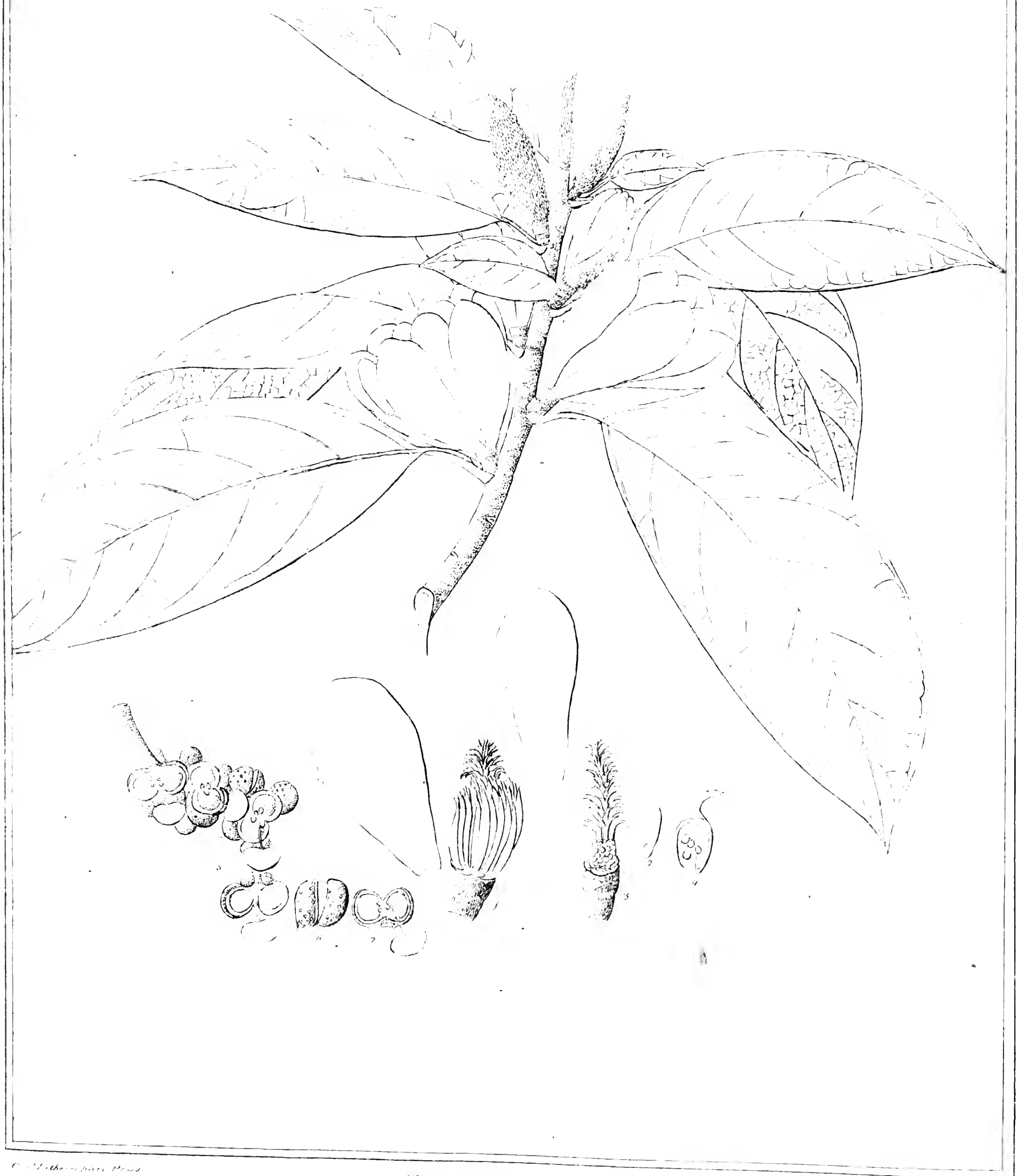
Habitat in Sheopore ; tempus florendi idem ac prioris. Capsulæ maturescunt Novembre.

Statura major quam præcedentis speciei. Tota lævis, glaucescens. *Rami* longissimi, valdè tortiles volubilesque. *Folia* remotiuscula, ovata, e medio in acumen gracillimum attenuata, plana, tri- ad sexpollicaria, marginibus crispatulis, nunc obsoletè repandis, basi rotundata, interdum subretusa, opaca, subtus prominenter trinervia, rarius quinquenervia, venis reticulatis, inconspicuis. *Petioli* unguiculares, sulcati, submarginati, ramum lineolâ elevatâ ambientes. *Flores* magni, speciosi, axillares, solitarii, longè pedunculati, ferè bipollicares, amœnè cœrulei, extus fuscescentes. *Pedunculi* teretes, graciles, hinc inde curvi, petiolo ter quaterve longiores, sesquipollicares ad bipollicares, sæpius ad medium vel infra apicem *bracteolis* duabus, oppositis, lineari-lanceolatis, viridibus, trilinearibus. *Calyx* (fig. 1.) cylindrico-oblongus, vix unguicularis, ore parum plicato quinquedentatus, basin corollæ angustatam æquans ; *dentes* lanceolati, acuti, marginulâ membranaceâ, angustissimâ, pallidâ connexi. *Corolla* (fig. 2.) campanulata, *tubo* amplo, ovato, convexo, basi angustato, subgracili ; *limbus* patens, plicatus, tubo dimidiò brevior, quinquelobus ; *lobi* latè ovati, acuti, absque interjectis lobulis accessoriis. *Faux* ampla, pervia, nuda. *Stamina* quinque, parallela, æqualia. *Filamenta* membranaceo-dilatata, plana, fundo tubi contracto supernè inserta, inde decurrentia, apice acuta. *Antheræ* in fauce corollæ erectæ, subexsertæ, basi subsagittatæ. *Stylus* (fig. 3.) brevissimus, divisus in *stigmata* duo revoluto-patentia, papillulosa, teretia, obtusa. *Capsula* (fig. 4. 5.) calyce corollaque emarcidis salvâ apice obtecta, oblonga, valdè compressa, pallidè flava, stylo coronata, ferè pollicaris, pedunculo suffulta cylindrico, æquante ; unilocularis, bivalvis ; *valvæ* naviculares, subcoriaceæ, intus nitidæ, marginibus incrassatis. *Semina* (fig. 6. 7. 8.) tenuissima, parvula, oblonga, copiosa, fusca, lateribus valvularum densè inserta, imbricata, circumdata alâ latâ, tenuissima, orbiculari, umbilicum versus parum latiore et subretusa latereque externo appendiculatâ lobulo minuto, rotundato.

Observation.

These two beautiful and interesting plants, are so different in their climbing habit from all the other members of the order of *Gentianeæ*, that I cannot hesitate detaching them into a separate genus. The winged seeds and nectary, at the

Gest. Lithographie Basse *MAGNOLIA insignis. Wall.* *Lithographie und Druck*



M. IGNOLI ex del. Wall

Cour. Lithographie Pros Cusoulle.

MICHELI Del. et Lith. D'Ozouville

Imp. Lith. Mus. Calcutta

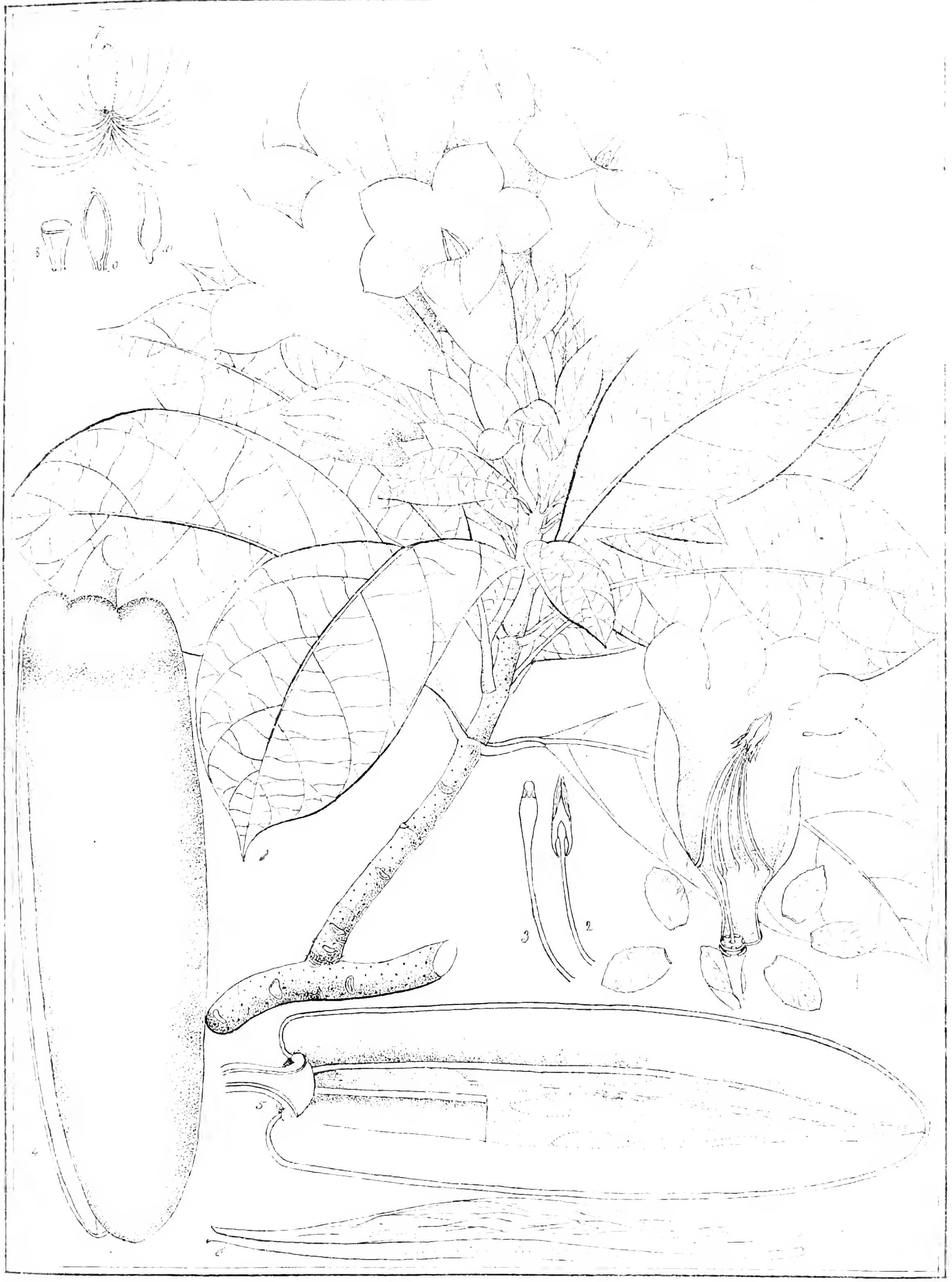
MICHELI del. Europa. De Cand

UNIVERSITY OF NEW MEXICO LIBRARY

Cal. Lithographed Press Calcutta

COLQUHOUNIA coccinea, Wall.

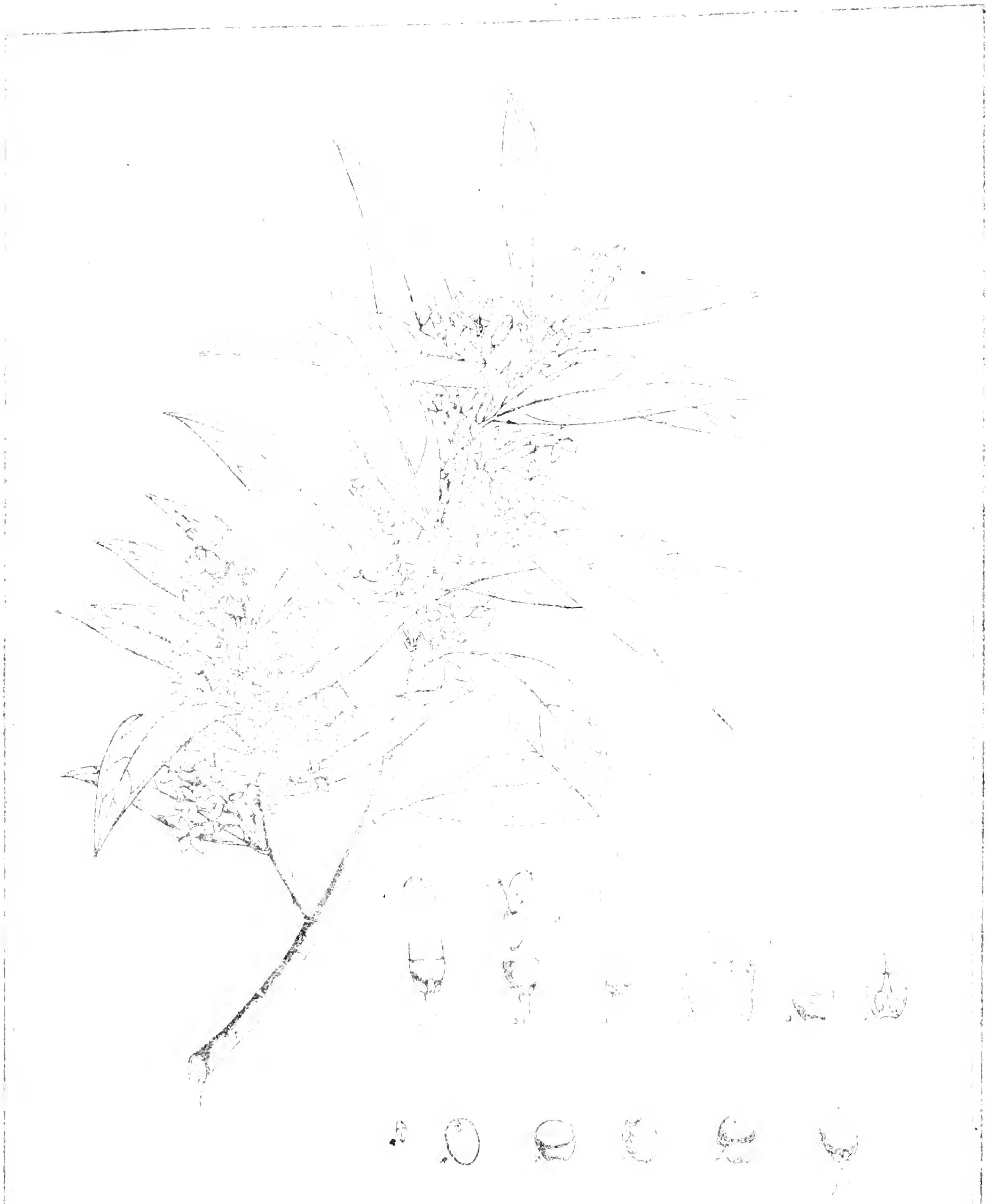
Vishnu Persaud del.

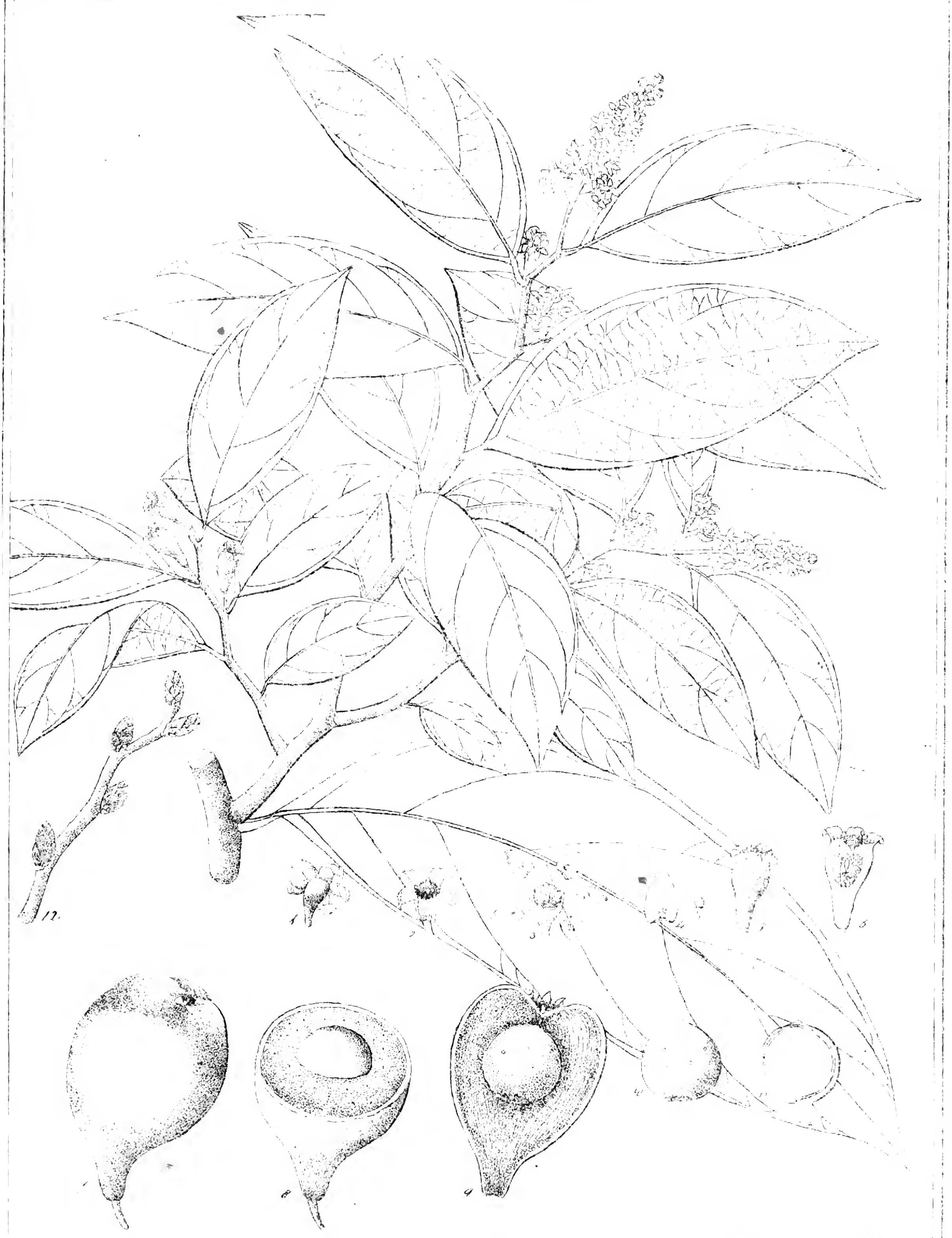


Chromolithographie Rose Calcutta

BEAUMONTIA *grandiflora* Wall.

BRITISH MUSEUM (NATURAL HISTORY)





Lith. Anst. v. C. Wesmael, Brüssel.

SPHAEROCARYA edulis Wall.

Go. Lithog. Press. Calcutta

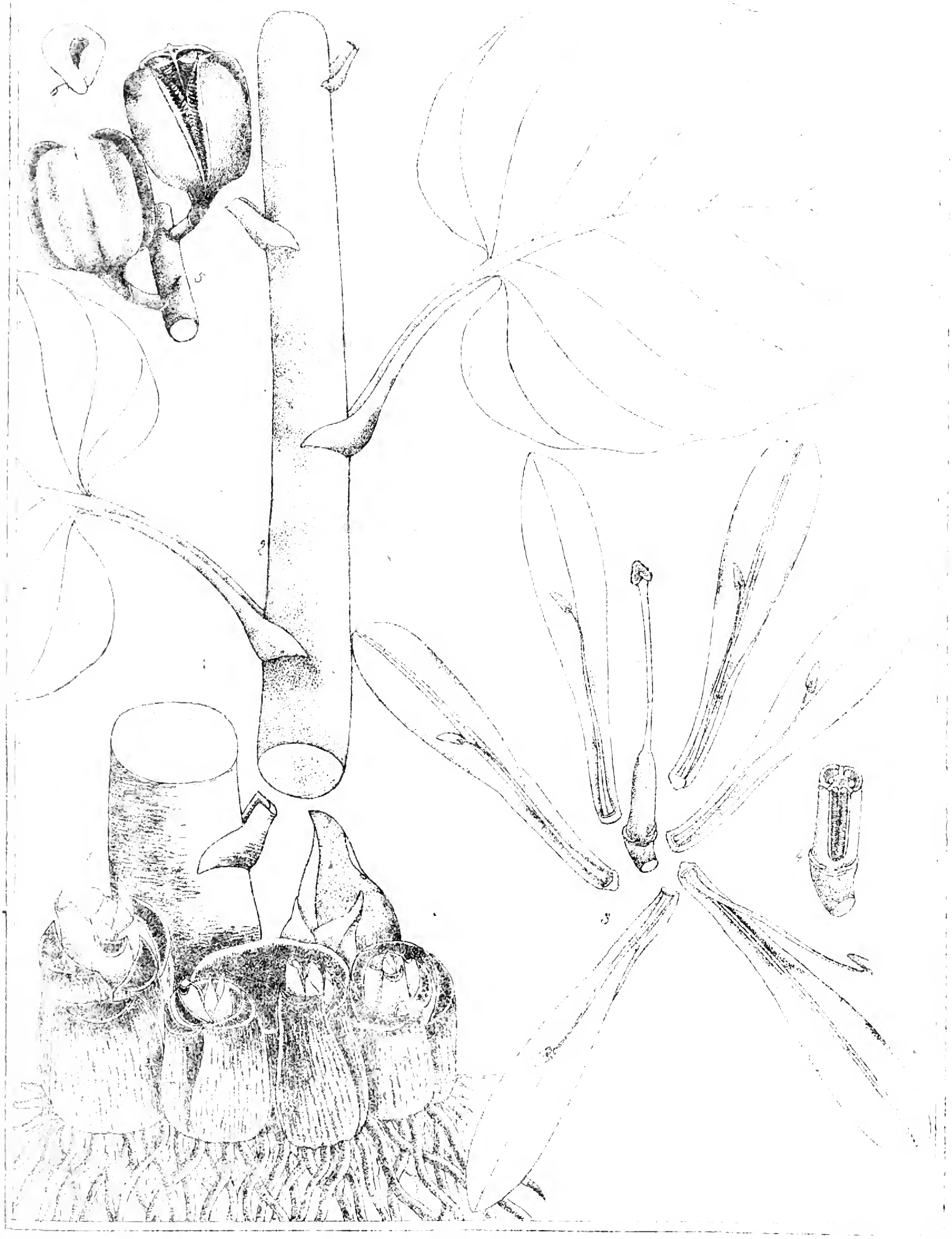
PASSIFLORA nepaulensis Wall

Fitch imp. wood del.

D

Gov.t Lithog.c Press Calcutta

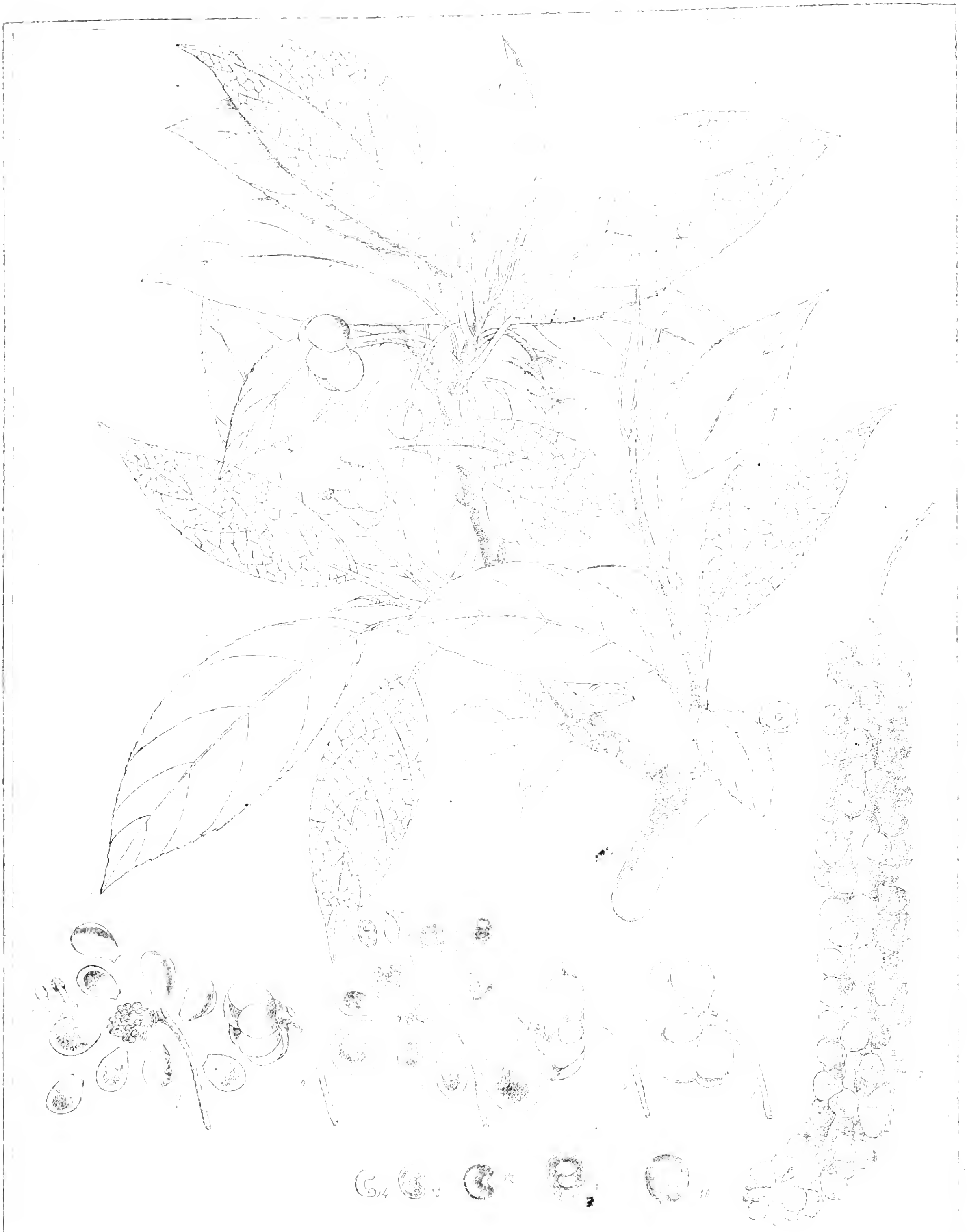
L. Wall. quadrilocum Wall.



Published by Longman, Hurst, Rees, Orme & Brown, Paternoster Row.

LILIUM superbum Wild

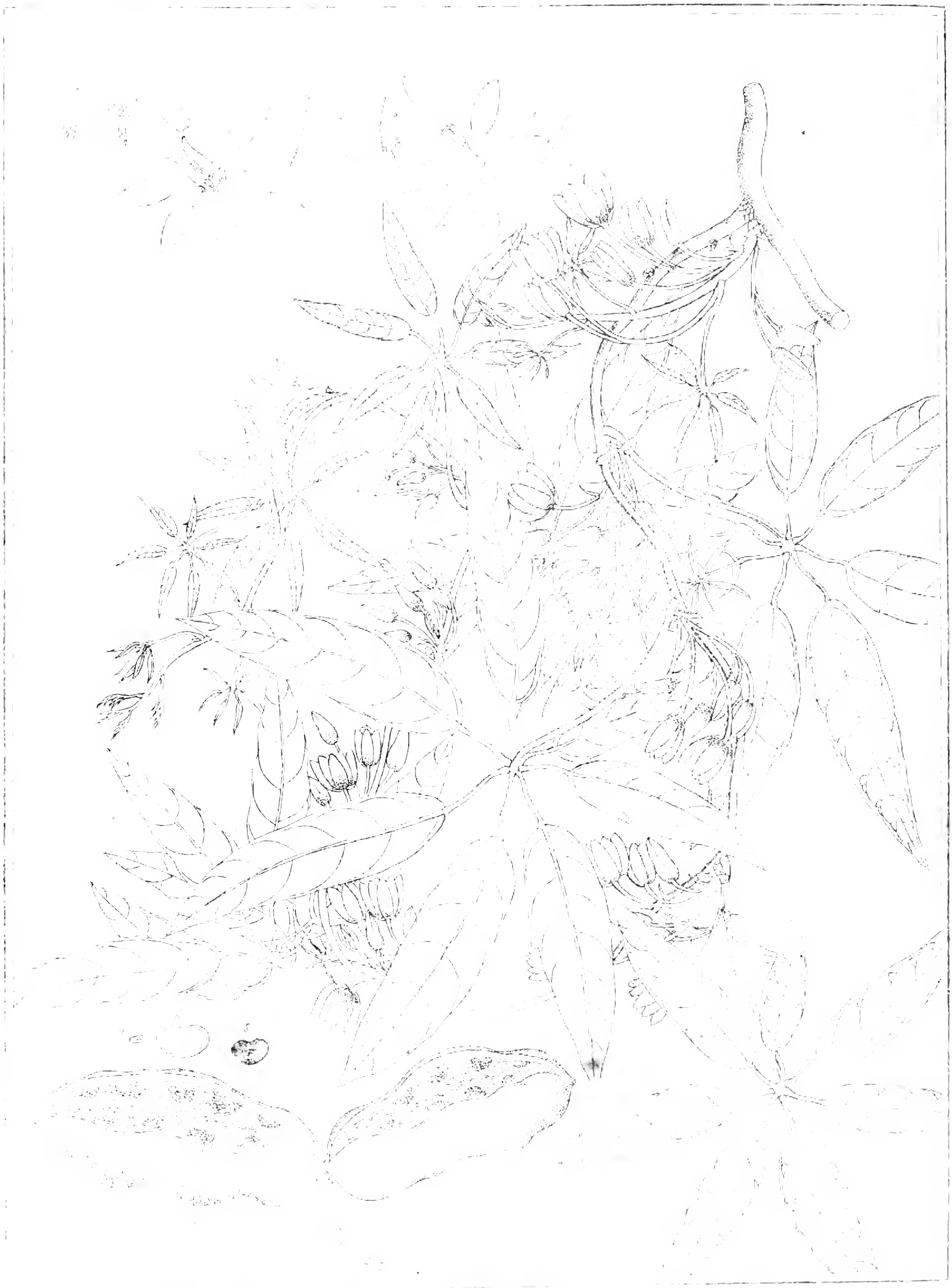
L

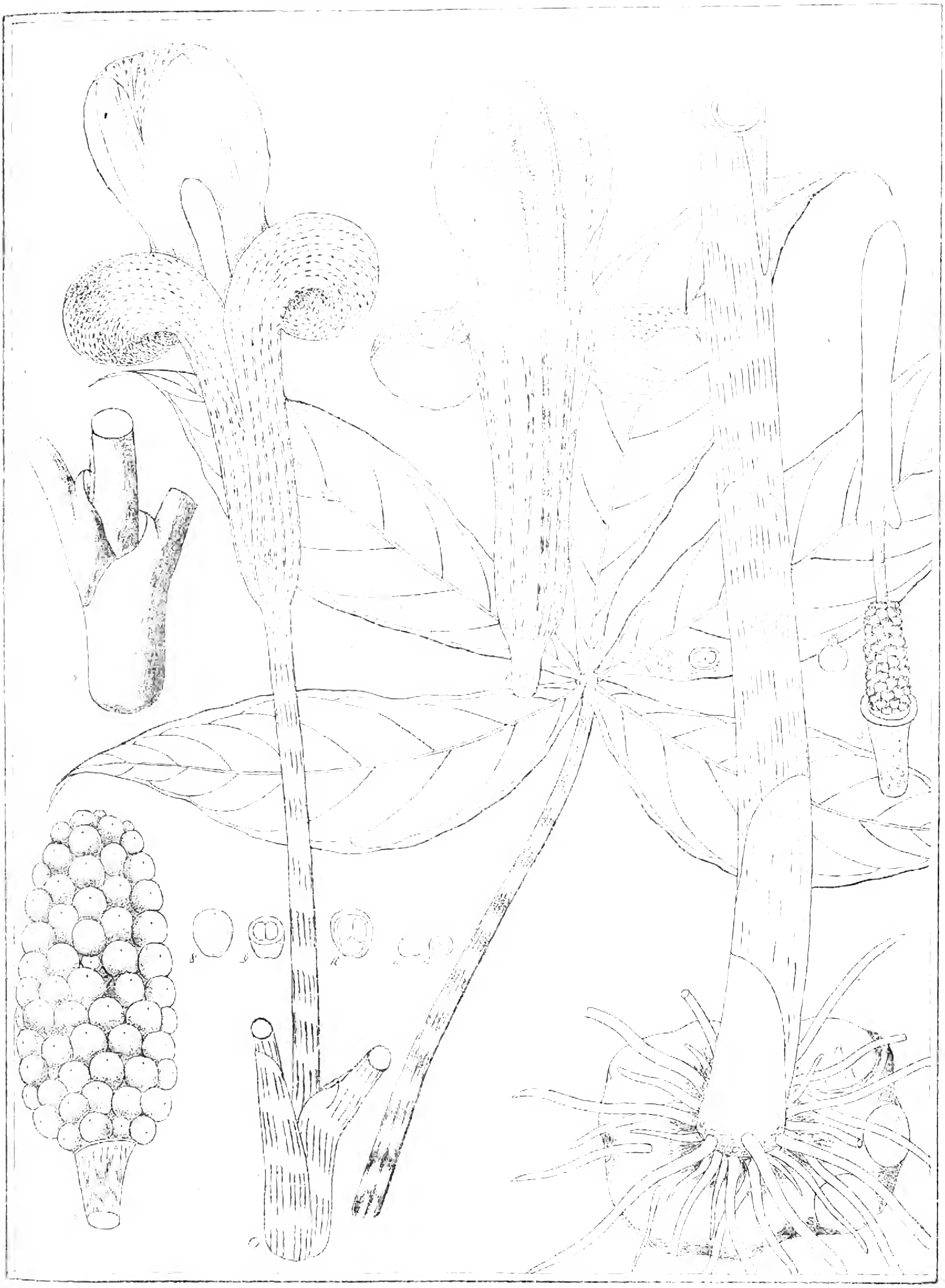


Calcographia Bras. Calcuttae

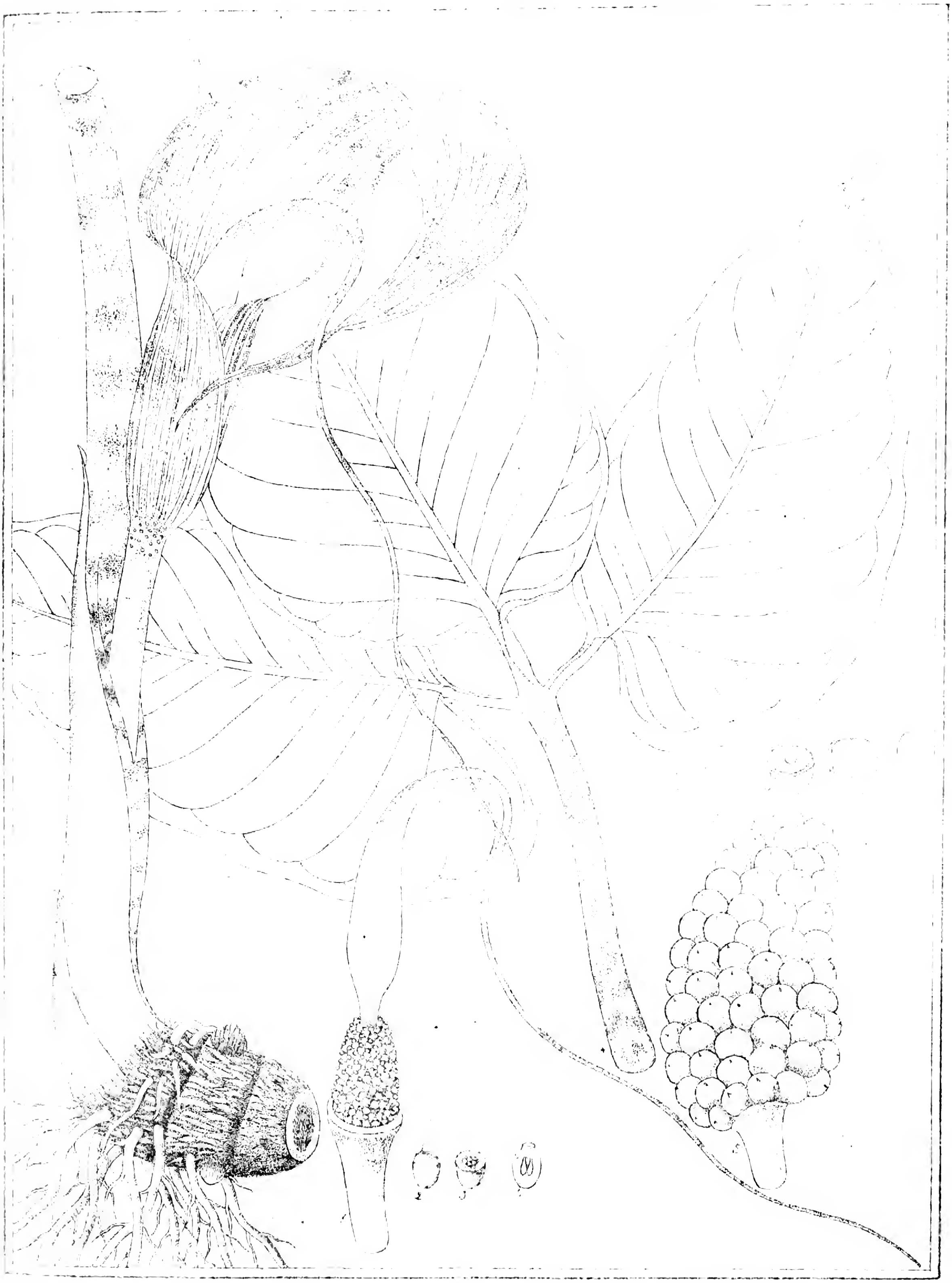
HOLBOELLIA *Lanceolata* *Wall.*

Grossard sc.





ARUM spathaceum Willd.



Calc. Lithographic Press, Calcutta.

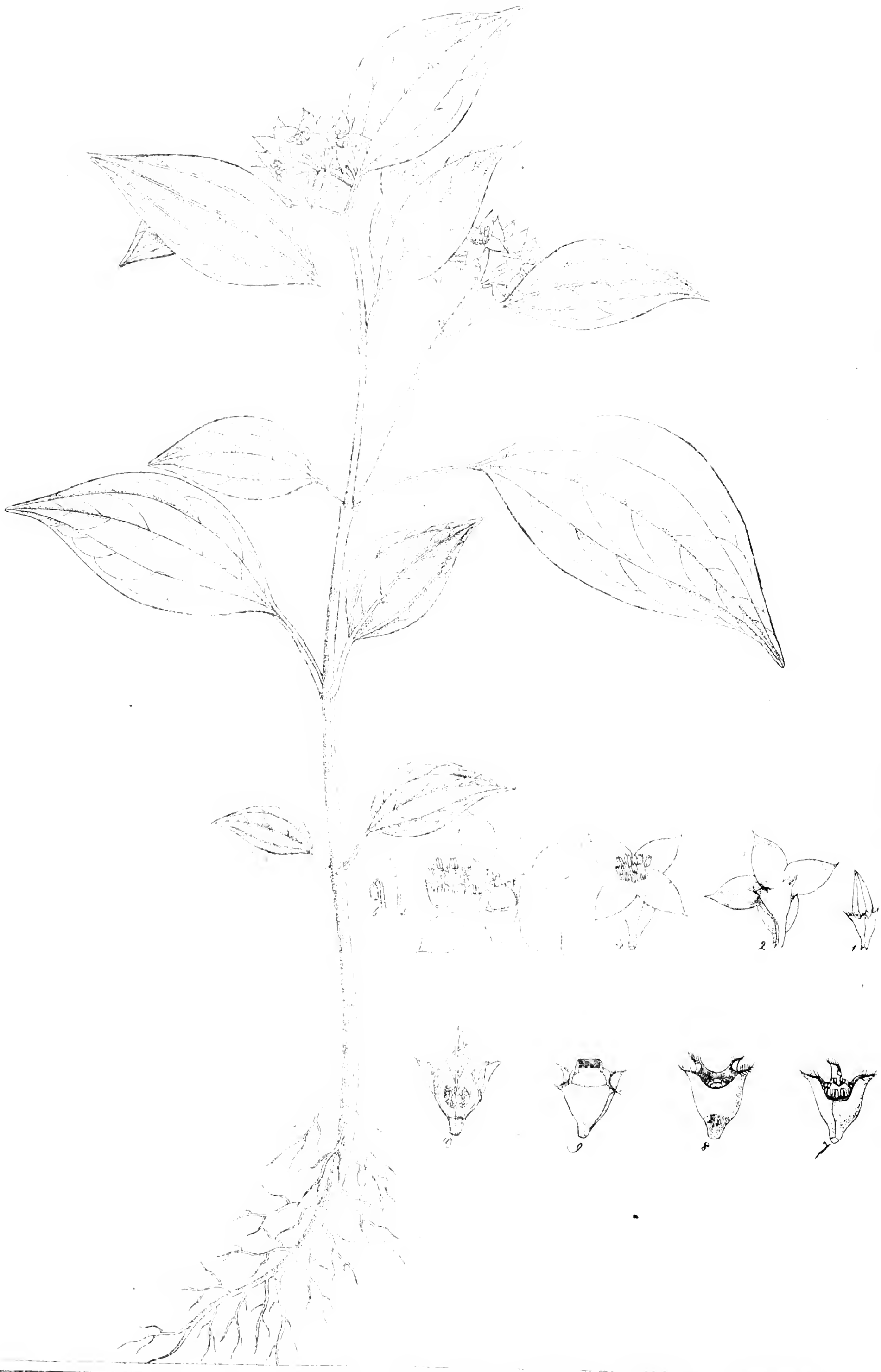
CINCHONA gratissima Wall

Nathaniel Wallich del.

Geo. Lithographic Press Cathedral

HYMENODICTYON Wall

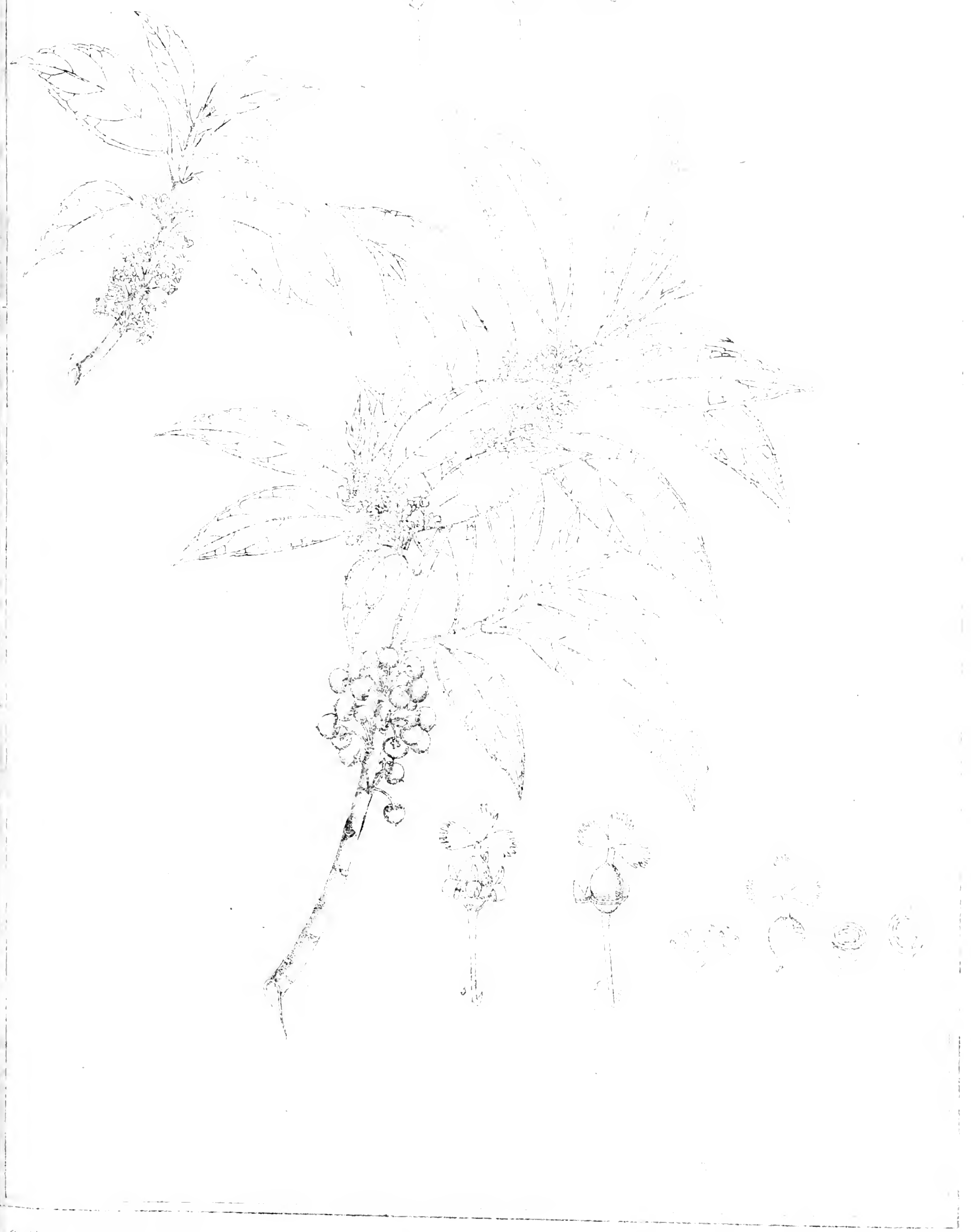
Lith. & Printed by



Chas Lithographic Press Calcutta

SARCOPYRAMIS napalensis, Wall.

Vishnuparsaud del.



Cal. Lithographic Press Calcutta

MYRSINE semiserrata, Wall.

Chauthen del. et lith.

MYRSINE capitellata. Wall

Cryptocheilus sanguineus Klug

Drawn & lith Pres

Gorachand del.

Chrysobaphus Roxburghii Wall.

Vishnupersaud.

Dendrobium leopardinum, Wall (Dendrobium mut. 2)

Aquatic Lithog. Press

Ustungravured. del

Lilium longiflorum Thll.

Standard Lithog.r Press

Tab. 30

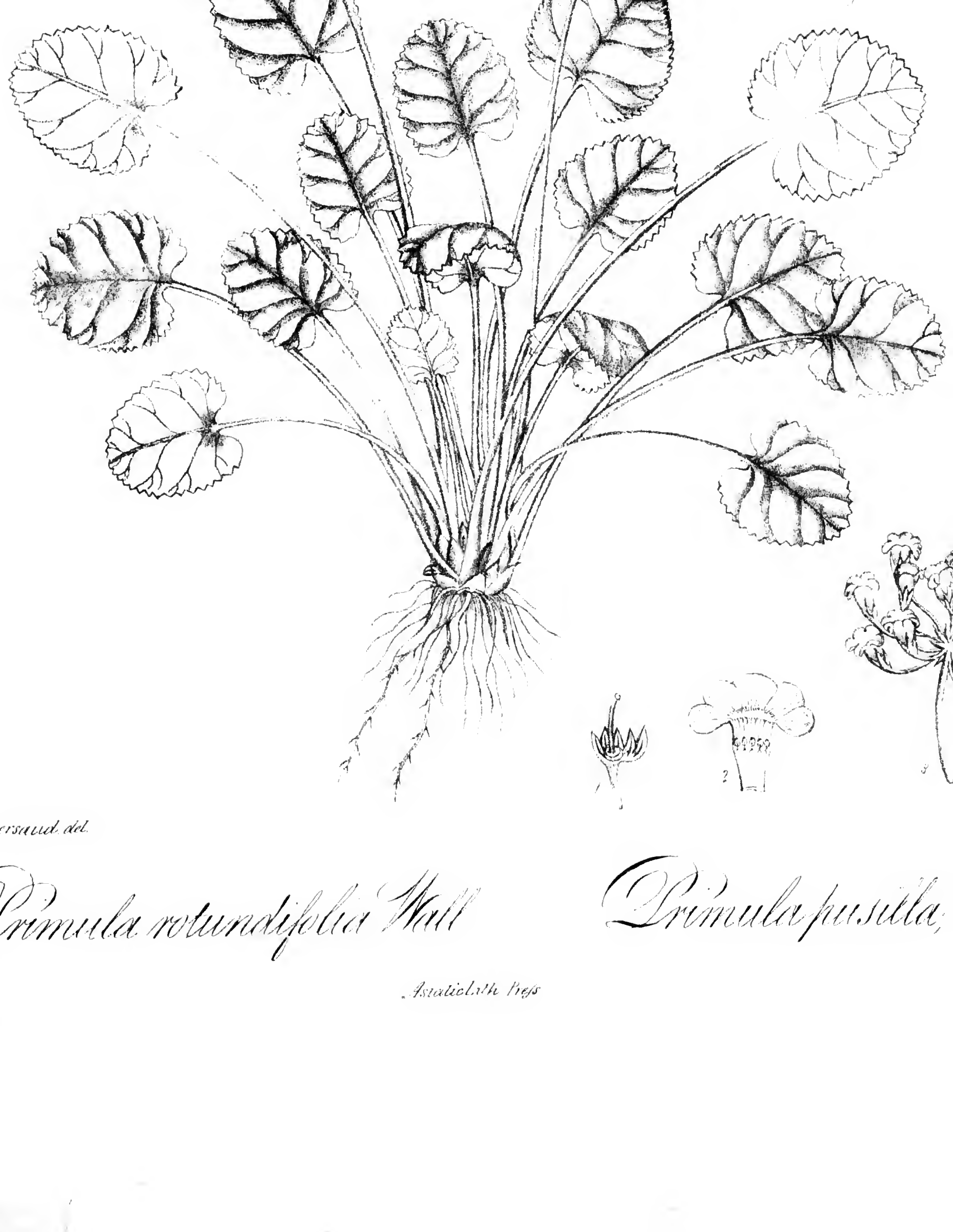
Euonymus grandiflorus Wall

Asiatic Lath Pap.

Primula farinosa Wulf

Graebnerd del

Asclepiadeae Vogt



Vishnupersaud del.

Primula rotundifolia Wall

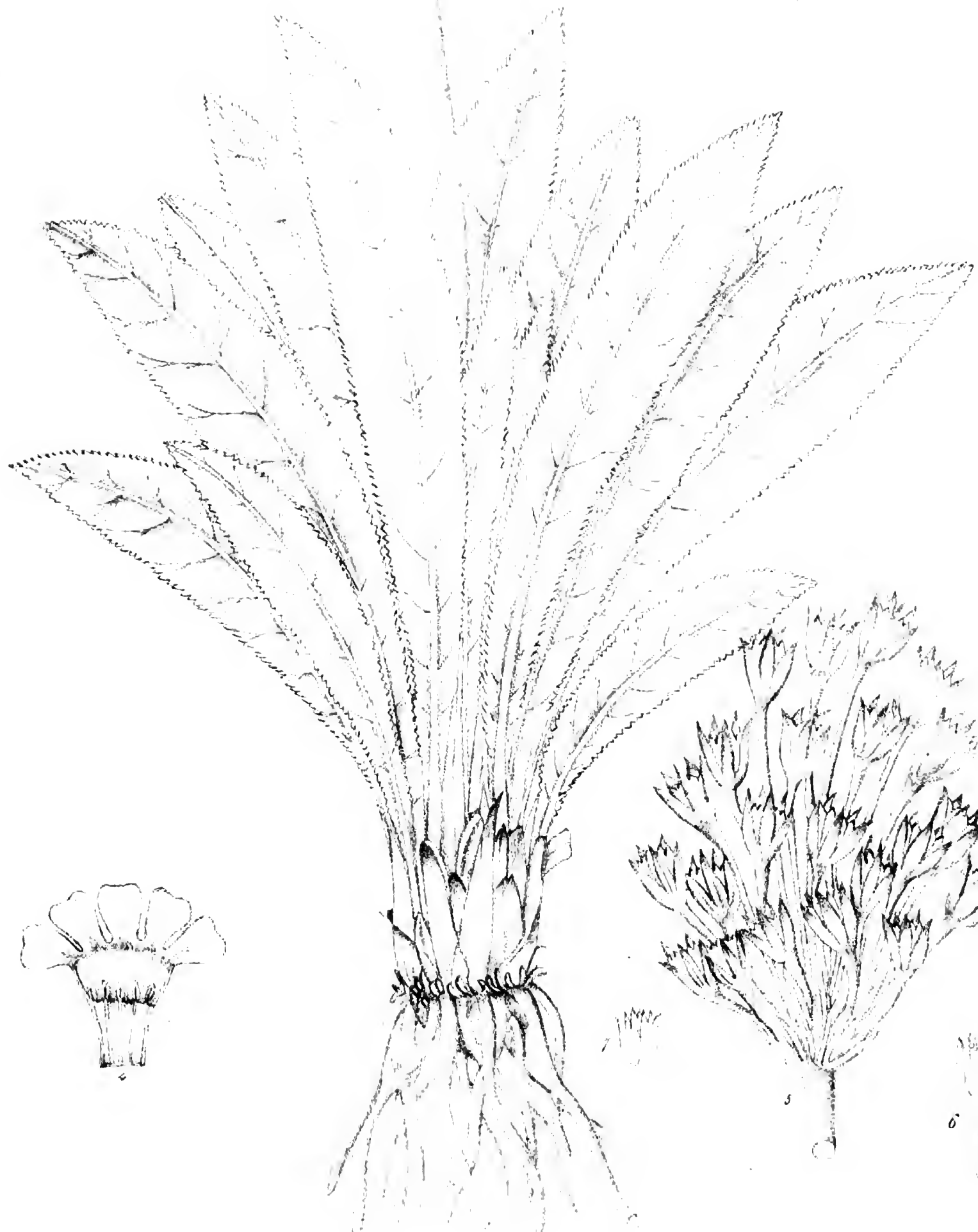
Primula pusilla, Wall.

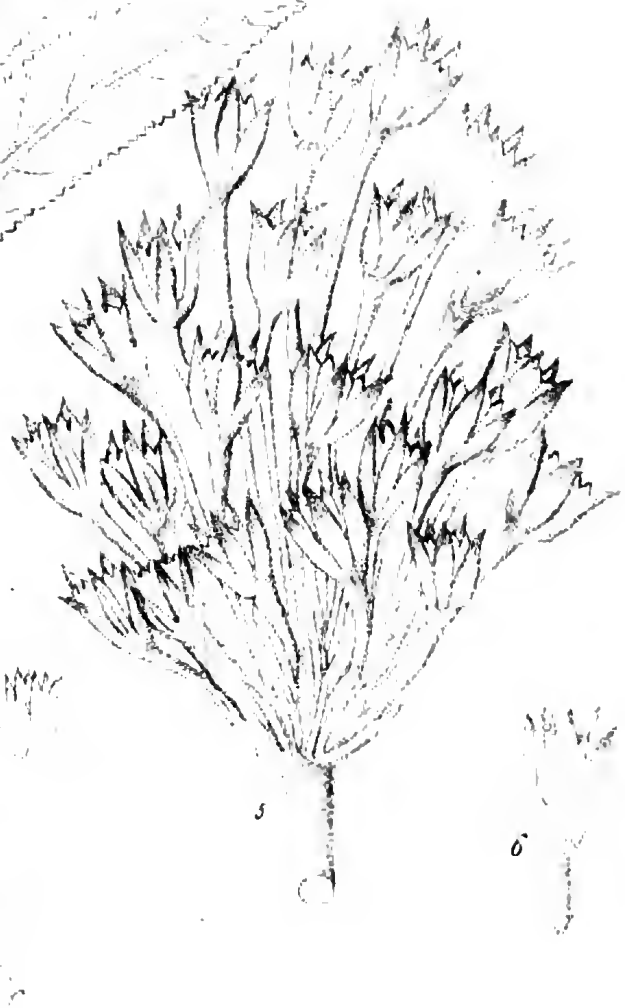
Asiatic Lith Press

Primula gloriosa, Wall

Vishnupersaud del.

Asiatic Lithog.ª Press.





Primula Stuartii Wall.

Gonichaund. del

Ashdec Lithog.r Preys

Wulfenia obliqua Wall.

Scrophularineæ Rhys

Gonsland del.

Adamus exposuit et delin.

Sculp. Le Hoyo Par.

Gor. sharma del

Thunbergia coccinea Wall.

Asiatic Lithog.c Press

Gonxhend del

Symmeria nefiadense Wall

Asiatic Lithog.ᵉ Press

Dactylicapnos thalictrifolia, Hook.f.

Gard. Chron. 1848

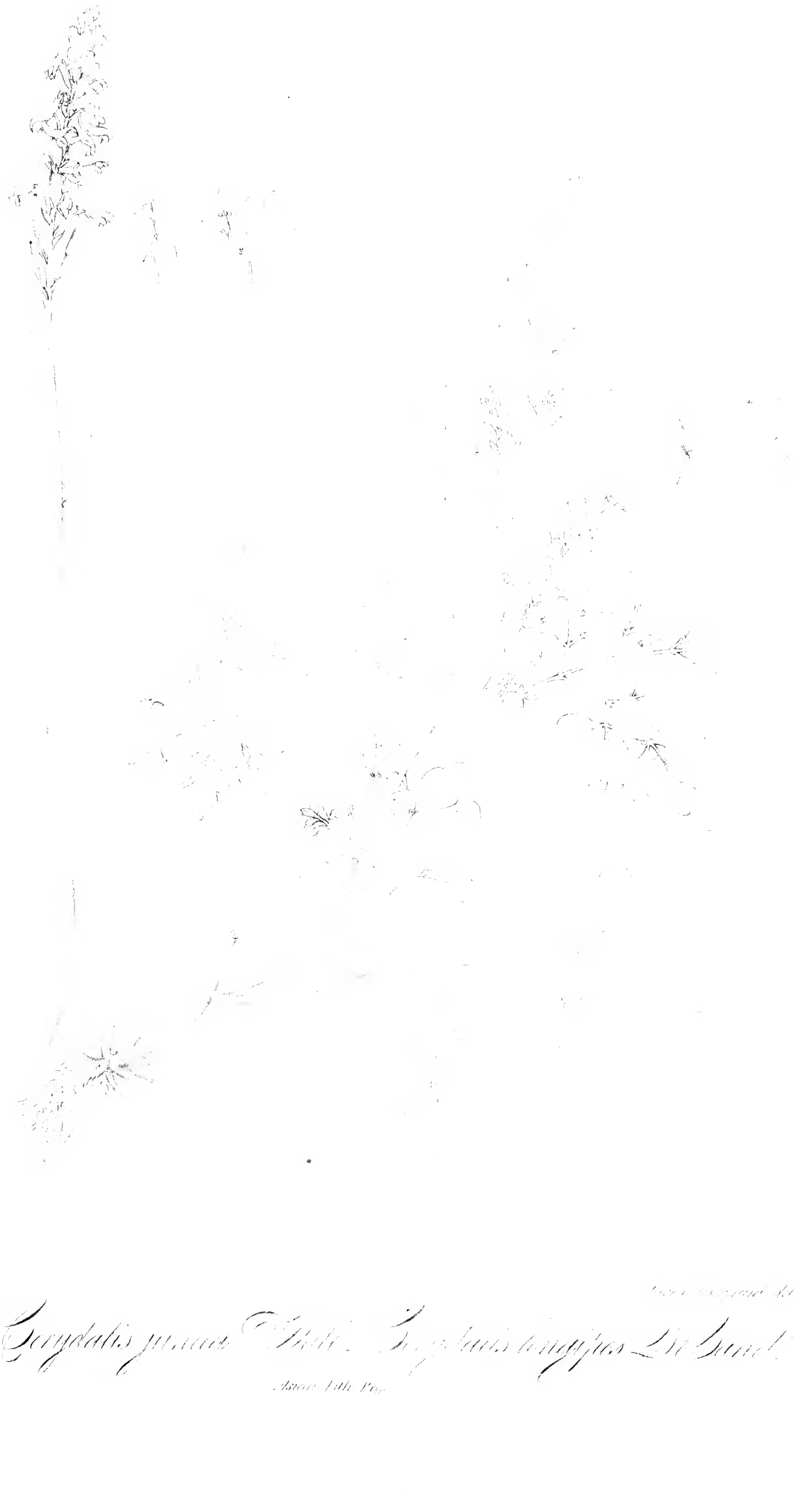
Ad. nat. Lithogr. Pinx.

Corydalis chaerophylla DC Icon.

Isaac Lith. Prys

Corydalis micrantha Wall.

Bentley Lithog. & Press.



Corydalis fumaria Vill. Fumeterre bulbeuse De Cand.

Aconit. 18th. Pag.

Podocarpus macrophylla Wall.

Gunckand del.

South Lith.ª & Print.

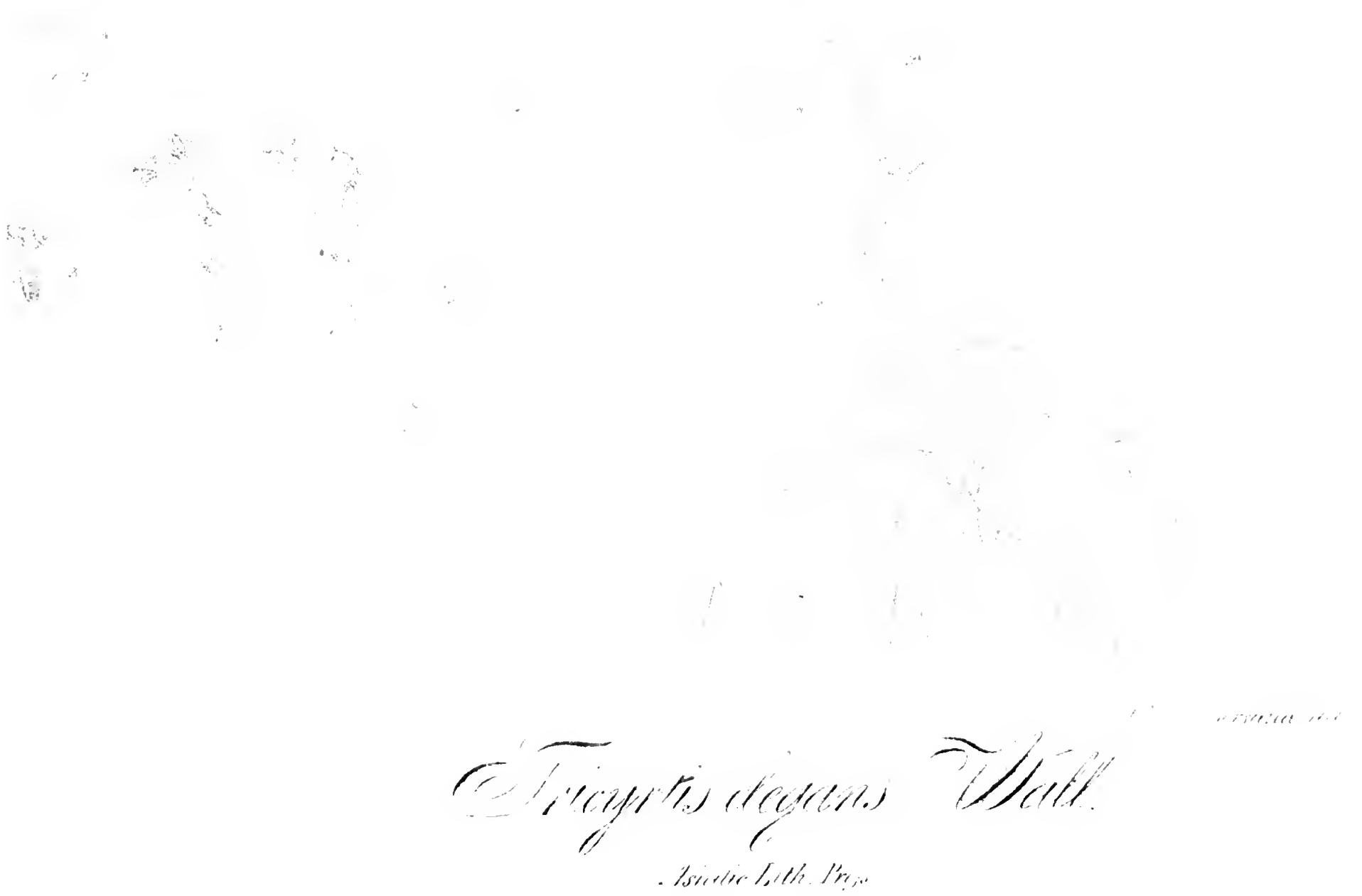
Fish inpenand del

Iaculi muscosa, Haenke

Adrian Lithog Press

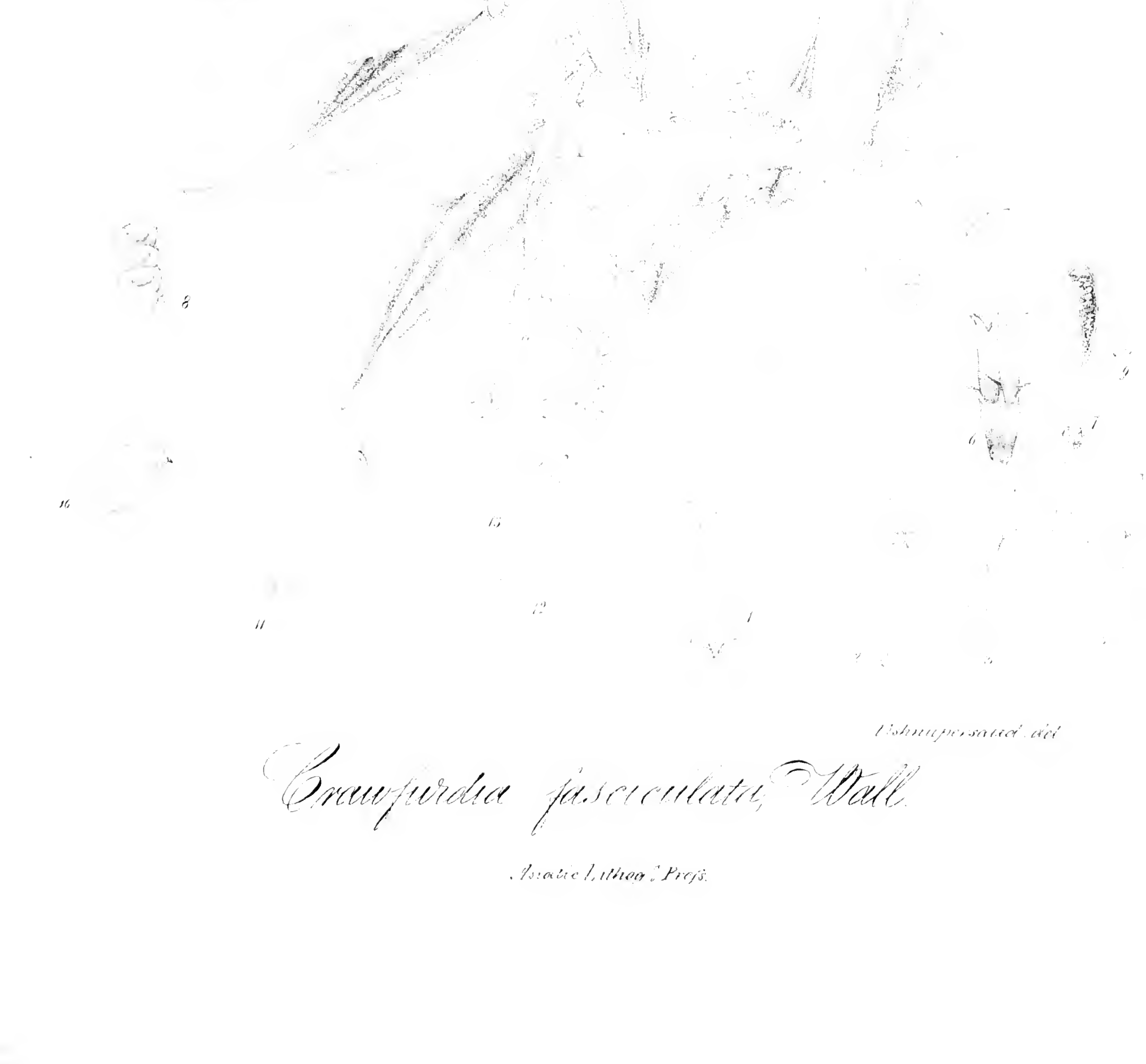
Myrica sapida Wall.

Lith. de Bacler d'Albe



Fragaria elegans Wall.

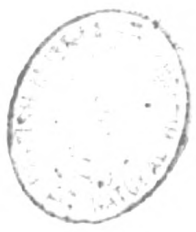
Asiatic Lith. Press



Ishnuperianthoides

Crawfurdia fasciculata, Wall.

Isaac Lithog.



Pl. 42

Posthumous del.

Banksian Species of Plant

Scott's Lithog.ic Press.

Gonichaned. del.

Hydrangea vestita, Wall.

Asiatic Lithog.ª Press

Tab. 11

Hydrangea altissima, Wall.

Lemaire Lithog.e Pros

Index.

	Page.	Plate.
Adamia	46	
cyanea	46	36
Arum		
costatum	28	19
nepenthoides	26	18, 20 f. vi-ix
speciosum	29	20 f. i-v
Beaumontia	14	
grandiflora	15	7
Chrysobaphus	37	
Roxburghii	37	27
Cinchona		
gratissima	30	21
Colquhounia	12	
coccinea	13	6
vestita	14	
Corydalis		
chaerophylla	52	40
diphylla	54	
Govaniana	55	
juncea	54	42
longipes	53	42
meifolia	52	41
Crawfurdia	63	
fasciculata	63	47
speciosa	64	48
Cryptochilus	36	
sanguinea	36	26
Dactylicapnos	51	
thalictrifolia	51	39
Dendrobium		
leopardinum	39	28
Euonymus		
grandiflora	41	30
Fumaria		
paviflora	55	
Gymnema		
acuminatum	50	
attenuatum	50	
hirsutum	50	
napalense	49	38
parvifolium	50	
sagittatum	50	
Hemiphragma	16	
heterophyllum	17	8
Holboellia	23	
angustifolia	25	17
latifolia	24	16
Hydrangea		
altissima		50
vestita		49
Hymenodictyon	31	
flaccidum	31	22
Kadsura	9	
grandiflora	10	14
japonica	12	
propinqua	11	15
Lilium		
giganteum	21	12, 13
longiflorum	40	29
Magnolia		
excelsa	5	2
insignis	3	1
Michelia		
Doltsopa	7	3
Kisopa	8	4
lanuginosa	8	5
Myrica		
Farquhariana	60	
integrifolia	60	
sapida	59	45
Myrsine		
capitellata	35	25
semiserrata	34	24
Passiflora		
napalensis	20	11
Podocarpus		
macrophylla	56	43
Primula		
floribunda	43	33
petiolaris	42	31
pusilla		32
rotundifolia	42	32
Stuartii	44	34
Putranjiva		
Roxburghii	61	
Sarcopyramis	32	
napalensis	32	23
Schoepfia		
fragrans	18	9
Sphaerocarya	19	
edulis	19	10
Taxus		
nucifera ?	57	44
Thunbergia		
coccinea	48, 58	37
Hawtayneana	49, 58	
Tricyrtis	61	
pilosa (elegans)	62	46
Wulfenia		
Notoniana	46	
obliqua	45	35